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THE ØRESUND EXPERIMENT

A NORDIC MESOSCALE DISPERSION EXPERIMENT
DATA OBTAINED FROM THE NILU MEASUREMENTS

B. Sivertsen

NORSK INSTITUTT FOR LUFTFORSKNING
Norwegian Institute For Air Research
POSTBOKS 64 — N-2001 LILLESTRØM — NORWAY

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SUMMARY

NILU participated in the Øresund mesoscale experiments with the research aircraft, SF_6-tracer time integrated samplers, semicontinuos samplers, portable gas chromatographs for field analysis and a mini radiosonde system. Especially the NILU aircraft measurements gave valuable input to the experiments.

The turbulence measurements clearly showed the build up of internal boundary layers across the land-water-land surfaces of the Øresund region. Also a temperature and wind profile from a radiosonde was added to complete the picture of a convective surface layer over Sealand.

SF_6 traverses collected over Øresund from the aircraft and from a boat revealed the height of the SF_6 plume released at 95 m near Barsebäck.

The SF_6 concentration distribution near the surface on Sealand at 30 km distance from the release and 8 to 10 km west of Øresund showed the position and magnitude of the plume in this area. All data are presented in this report.

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THE ØRESUND EXPERIMENT

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1 INTRODUCTION

During May and June 1984 an experiment was carried out with the purpose of investigating the nature of the turbulence and atmospheric dispersion over a region with a relatively cold water and warm land surface. The goal was to obtain a data set that can be used to verify mesoscale models in a coastal environment. The campaign was carried out over the Øresund strait between Denmark and Sweden. The strait also gave name to the experiment.

Emphasis was placed on measuring the meteorological parameters that control the atmospheric dispersion process. For this purpose use was made of a large proportion of the available meso- and micrometeorological instrumentation in the Nordic countries in addition to considerable contributions from non- Nordic countries. The atmospheric dispersion and the advection process in the area were investigated by carrying out tracer experiments and by tetroon flights. The tracer measurements comprised time-averaged and instantaneous concentrations. From a scientific point of view the Øresund region is well suited for such an investigation because the coastline on both sides of the strait is rather straight, the two coastlines are almost parallel, and the land area is nearly flat. The width of the strait is about 20 km. The land east of Øresund is rather level, hilly farmland reaching a height of about 100 m (5-10 km) inland. On the western side of Øresund lies Copenhagen with its surburbs; this area is very flat but has high surface roughness due to the urban character. During the experimental period the watersurface temperature of the Øresund was a few degrees less than the land temperature during daytime. The measuring campaign took place during the period 16 May to 15 June 1984. During 4-10 June a special intensive measuring program was carried out.

The campaign was a joint effort of 15 institutions located in the Nordic countries (Denmark, Finland, Norway, and Sweden), and in Belgium, Germany, and in the Netherlands.

Norwegian Institute for Air Research (NILU) participated in the Øresund experiment with:

- the NILU research aircraft
- SF_6-tracer automatic samplers (51 units)
- semi continuous SF_6-sampling units
- a mini radiosonde system

In this report a technical description of the equipment is presented. Data and some results from the NILU participation are also presented.

2 INSTRUMENTS

2.1 AIRCRAFT

The NILU research aircraft is a twin-engine Piper Navajo. Its maximum flight time is about 7 hours with a horizontal cruising speed of 70 m/s. The aircraft is equipped for instrumental flight conditions (IFR) including deicer, forward looking radar and Omega-navigation receiver.

The power supply available for measuring equipment is 28 V DC/100 A A and 220 V/50 Hz/1kVA.

The aircraft was equipped with the following instruments for measurements of air pollutants, tracers and meteorological variables:

- Particle light scattering detector (Nephelometer)
- Universal Indicating Turbulence System (MRI UITS 1120)
- Dew Point sensor (E G & G, cooled mirror)
- Pressure sensor (Setra System model 270)
- Free-air temperature sensor (Rosemount mod. 102, Pt 100)
- Single Channel Strip-chart Recorder (Hewlett Packard 7155)

- Multi-channel microprocessor based datalogger (NILU)
- Laser Aerosol Spectrometer (Particle Measuring System, LAS-X)
- Sequential syringe SF_6-sampler (Heggen, NILU)

The Omega/VLF navigation system in the aircraft was interfaced with the data logger. Thus every record was linked to an Omega geo-ref. The VLF/Omega system is a global navigation system and not really suitable for small scale flights. However, with additional visual references to the ground and within short time periods, the data can be corrected to yield good positioning results.

2.1.1 SF_6 sampling

The SF_6-samplers are similar to the ones used for ground based sampling. They were not linked to the datalogger system. Every single sample was individually sealed after each run to avoid interference, diffusion or loss due to pressure (altitude) changes. Samples were usually collected every 2 second equivalent to a distance of between 100 and 200 m, dependent upon wind speed and direction. Positions were taken at the beginning and at the end of each traverse, and at certain points along the traverses.

2.1.2 The turbulence measurements

Turbulence is measured from the NILU aircraft with a MRI "Universal indicating turbulence system (UITS)" which continuously indicates a turbulence intensity value R.

Theory and experiments have shown that the statistical properties of turbulence in the inertial subrange of eddy sizes typically of the order of 0.1 to 500 m, can all be related to a single quantity, ε, the dissipation rate. The UITS provides the simplest intrument approach to ascertaining ε. It senses turbulent fluctuations in a wavelength band for which the aircraft serves as a steady platform. It measures the longitudinal velocity, sensed with a pitot- static pickup. From the signal, the RMS value of the fluctuations is computed. In the com-

putation the gain factor is automatically varied at a prescribed function of air speed, to develop the output R. The dissipation rate ε is related to R by:

$$\varepsilon^{1/3} = R. \ (\varrho/\varrho_o)^{-1/3}$$

where ϱ/ϱ_o is the ratio between air density at altitude, to that of sea level.

Turbulence classification can be described by:

R = 0.8-1.9 : light
R = 1.9-4.5 : moderate
R = 4.5-10.7: heavy

According to Hanna (1968) the eddy diffusion coefficient K can be related to the dissipation rate during unstable and near neutral atmospheric conditions

$$K = 0.3 \ \varepsilon^{1/3} \ . \ z^{4/3}$$

where z is height (applicable for $0<z<300$ m).

2.1.3 Data recording and logging units

The research air craft is equipped with one single-channel recorder for continuous registration of one selected parameter, normally the nephelometer output.

The data-logging equipment collects data from all instruments including the Omega-navigation system. This system allows to correlate all measurements to a map- reference. Channels for additional equipments are available. Time averaging is possible and is selectable between 5 and 220 sec.

The storage of data-logger output is done by exchangeable magnetic bubble memories. The system is controlled from the operator seat, where a set of panel meters and switches for supervising is placed.

Communication with the data-logger is performed using a keyboard/ printer.

The content of the bubble memory cassettes in flight (Fujitsu) is transferred to magnetic tape immediately after landing using a special receiver unit. Selected parameters can be displayed immediately by colour graphics. If the actual map coordinates are fed into the system a map of the flight- route can be created. Listing of results and graphics copy by printer is possible. The receiver unit is transportable and can be interfaced to other computers.

2.2 THE MOBILE RADIOSONDE SYSTEM

Low altitude radio sondes (The Butler National LARS 5100) were used by NILU to measure temperature and wind profiles as a function of height.

The temperatures sensor is shielded to avoid direct sun radiation. The position of the radio sonde balloons is determined with a theodolite and a laser range finder (SIMRAD LP7). The distances are determined with an accuracy of $\pm$ 5 m between 150 m and 9 km.

2.3 TRACER SAMPLING EQUIPMENT

Air samples were collected in inexpensive plastic syringes on either instantaneous or time-averaged basis. Time averages were usually taken over 15 minutes with automatic battery powered samplers. One sampler usually collects 2 sequential 15 min samples.

The desired number of automatic samplers (51 samplers were available) were loaded with two syringes each. The air was pulled through a small bore hypodermic needle at the end of each syringe intake to prevent backdiffusion of the sample air. The samplers were programmed to start at a given time, before being put out at the desired location in the

test area. These samplers were most often, during the intensive experiment period, used along the road E4, west of Copenhagen.

Another automatic sampler has been designed for collecting several instantaneous air samples. Up to 90 samples can be taken at a predetermined interval. The shortest interval is 2 seconds and the sampling time is about 0.5 sec. This sampling unit was used in aircraft SF_6-sampling during the Øresund experiment.

Air samples were also "collected" and continuously analysed using an electrion capture detector gas chromatograph installed on board a ship in Øresund.

2.4 TRACER SAMPLE ANALYSIS

The samples were usually analysed immediately after each experiment using the portable electron capture gas chromatographs. If the analysis were not carried out within the first few hours, the hypodermic needles on all syringes were exchanged with caps. The simple sampling and analysis methods permit the collection of a large number of samples during a tracer experiment and allow the results of one experiment to be available before the next experiment is started. A more detailed description of the NILU tracer gas system is given by Heggen and Sivertsen (1983).

3 NILU PARTICIPATION IN ØRESUND

A total of nine tracer experiments were carried out during the campaign. Two of the experiments belong to the intensive phase. Table 1 (Gryning 1985a) gives a few characteristic features of the meteorological conditions during the tracer releases. The periods of operation of the various instruments throughout the entire campaign can be found in Gryning (1985b).

Among the nine tracer experiments the one on 5 June has already attracted attention. It was the last experiment during the intensive

phase and by far the most densely instrumented with meteorological sensors as well as tracer samples.

TABLE I. Characteristic meteorological conditions and times for the tracer experiments.

	Tracer Experiments		Meteorology During Tracer Sampling					
			Wind at Gladsaxe at 115-m Height			Wind at Barsebäck at 95-m Height		
Experiment (1984)	Place of Release	Start of Release–Start of Sampling–Stop of Sampling (GMT)	speed (ms^{-1})	mean direction (°)	σ_θ* (°)	speed ($m \cdot s^{-1}$)	mean direction (°)	Global Radiation at Barsebäck ($W \cdot m^{-2}$)
16 May	Barsebäck	930–1330–1430	4.9	110	8.4	—	—	—
18 May	Gladsaxe	830–1220–1320	6.7	222	12.5	4.4	226	713
22 May	Barsebäck	900–1100–1200	11.7	91	7.3	—	—	—
29 May	Barsebäck	800–1100–1200	7.9	94	9.2	12.2	105	582
30 May	Barsebäck	800–1100–1200	3.4	140	12.3	5.6	129	142
4 June	Barsebäck	830–1100–1200	12.0	87	6.3	12.8	90	658
5 June	Barsebäck	800–1100–1200	10.9	88	6.9	11.6	91	463
12 June	Gladsaxe	830–1145–1245	—	268	13.6	6.6	199	644
14 June	Gladsaxe	1015–1300–1400	—	291	8.5	7.3	316	283

*Standard deviation of direction.

NILU participated during 4 of the above mentioned experiments, and was carrying out a smaller scale experiment at Barsebäck during westerly winds on 9 June 1984.

The NILU measurements are summarized:

29 MAY 84: Aircraft (temperature, turbulence, tracers..)
-SF_6 cross sections
7 runs 1005-1226 CET

4 JUNE 84: Air plane, various instruments 1037-1310 CET
Ground level traverse SF_6 1145-1215 CET

5 JUNE 84: Air plane 1000-1300 CET
Ship (SF_6) 1130-1215 CET
Ground level traverse of SF_6 1100-1200 CET
Radiosonde 1230 hrs

9 JUNE 84: Ground level sampling of SF_6 east of Barsebäck 1500-1530 CET

12 JUNE 84: Air plane traverses 1005-1310 CET.

The aircraft was flying traverses north-south along Øresund and east-west from Risö to Furulund during the tracer experiments(east of Barsebäck), as shown in Figure 1. In addition vertical profiles were taken. Sampling was made when spiraling from about 1000 masl and down to the sea surface at Middelgrund in the Øresund.

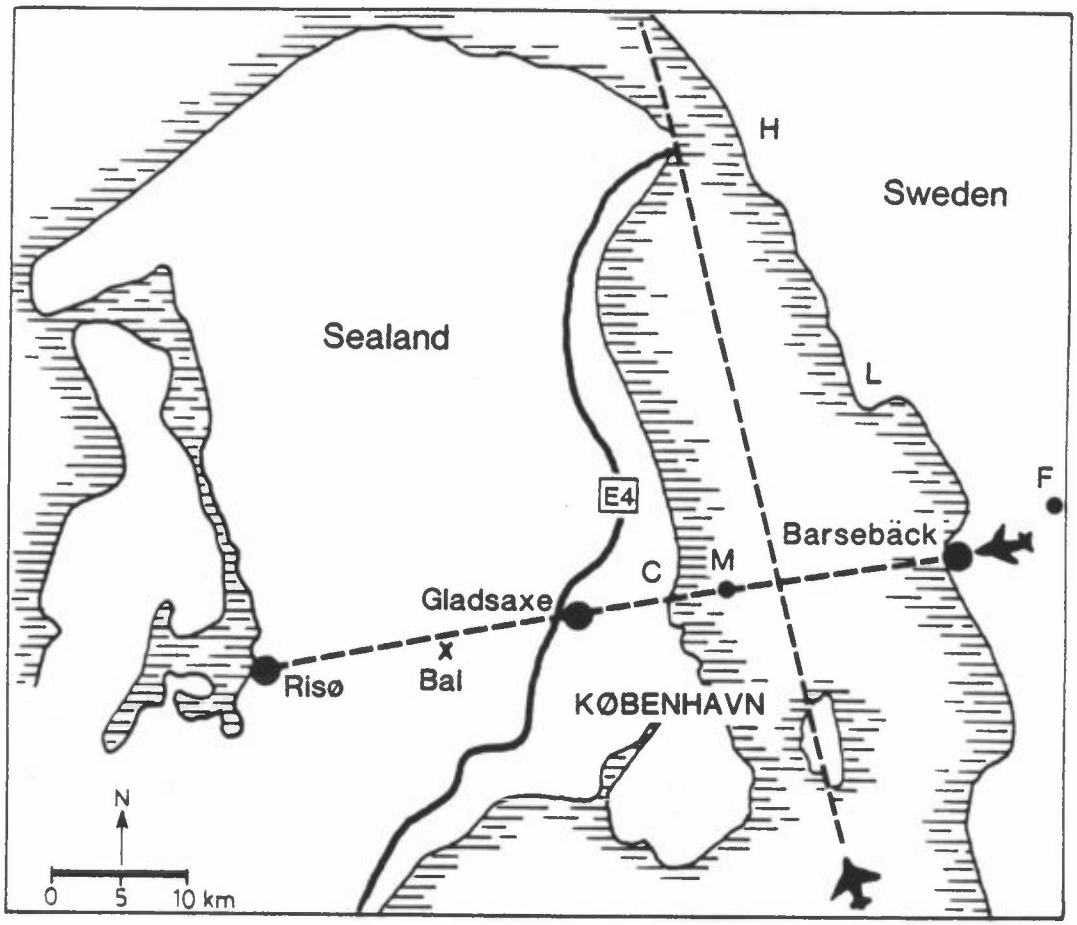

Figure 1: The Øresund area indicating the NILU flight traverses, E4 where SF_6 sampling was performed, M is Middelground where vertical profiles were taken and "Bal" indicating the location for a minisonde. C = Charlottenlund, F = Furulund, H = Helsingborg, L = Landskrona.

4 SOME RESULTS FROM AIRCRAFT MEASUREMENTS

A selection of results from aircraft measurements are extracted from the data base. The amount of information available varies from one day to the other. On 29 May and 12 June the aircraft left Oslo in the morning to participate in the experiments, while on 4 June and 5 June the aircraft was operating from Sturup.

4.1 29 MAY 1984

The aircraft came down from Oslo in the morning to take SF_6-cross sections over the Øresund near Middelgrund. SF_6 was released from Barsebäck from 0800 CET to 1200 CET. Aircraft sampling was performed from 10:05 to 12:26 CET.

Figure 2 shows SF_6 traverses at different altitudes. At about 100 m above sea level SF_6 was detected west of Landskrona. Another peak was clearly detected around the position of Middelgrund.

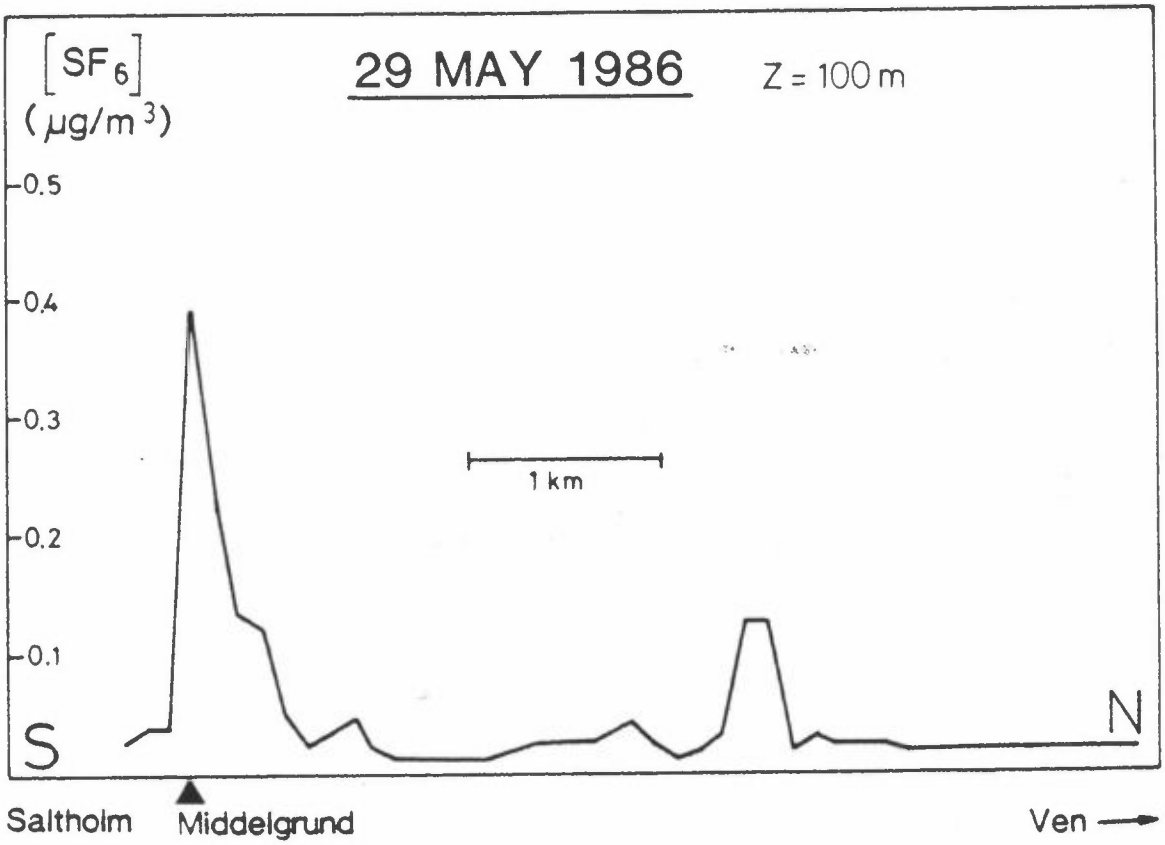

Figure 2: Instantaneous SF_6 concentrations measured along a flight path from Ven to Saltholm (north-south) across Middelgrund over Øresund on 29 May between 1009 and 1011 CET.

A horizontal cross section was made from Risø to Furulund at about 425 masl. Turbulence ($\varepsilon^{1/3}$), temperature and nephelometer data shown in Figure 3.

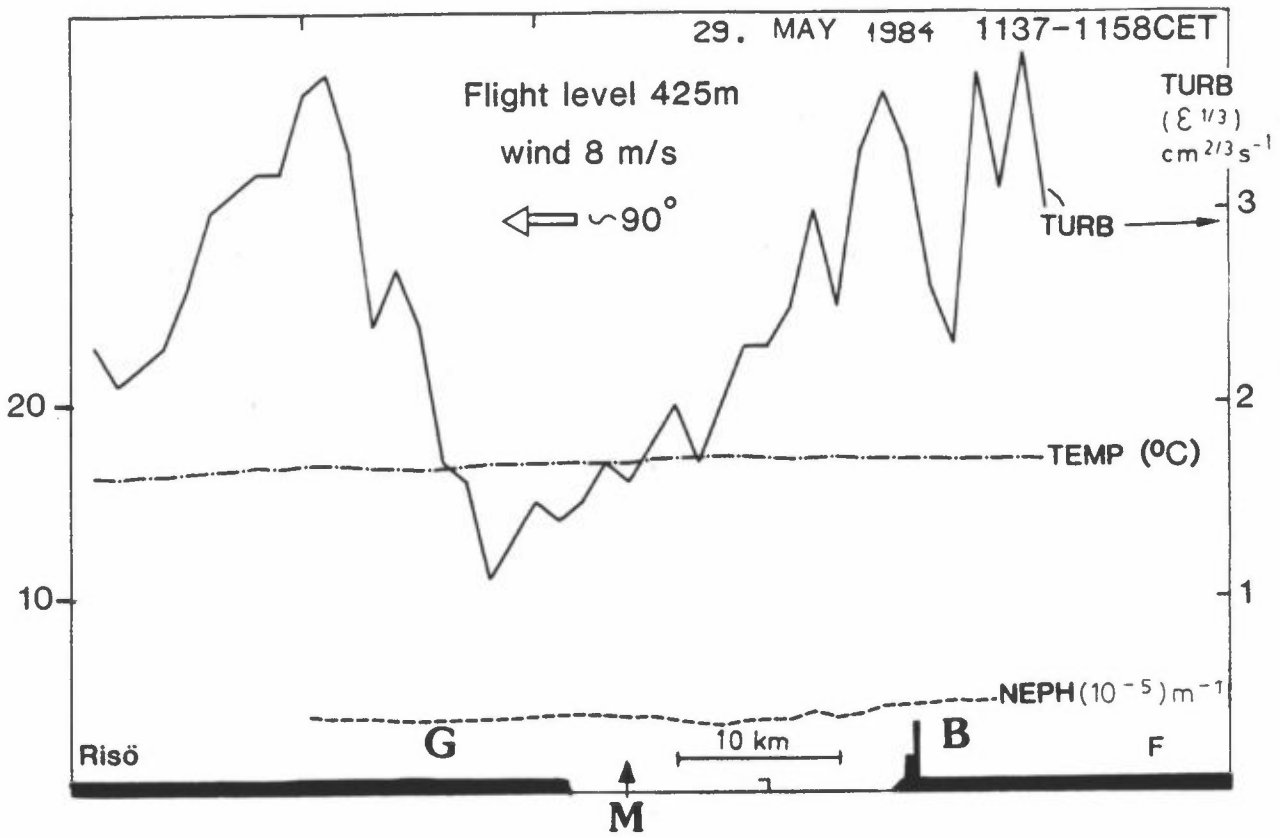

Figure 3: Measurements by the NILU aircraft along a traverse at 425 masl from Risø to Furulund, on 29 May 1984 from 1137 CET to 1158 CET. The positions of Gladsaxe (G), Middelgrund (M) and Barsebäck (B) are indicated.

The winds were from around east at 8 m/s, and we can clearly see a drop in small scale turbulence 7-10 km west of the Øresund coast line, indicating an increase in the internal boundary layer of about 50 m pr. kilometre.

4.2 4 JUNE 1984

Figure 4 shows measurement results from a horizontal flight traverse at ~ 250 masl from Risø to Sturup. The aircraft started at Risø at 11.45 CET. At this moment the wind was from east (84 deg) 12 m/s, 115 m above the ground at Gladsaxe.

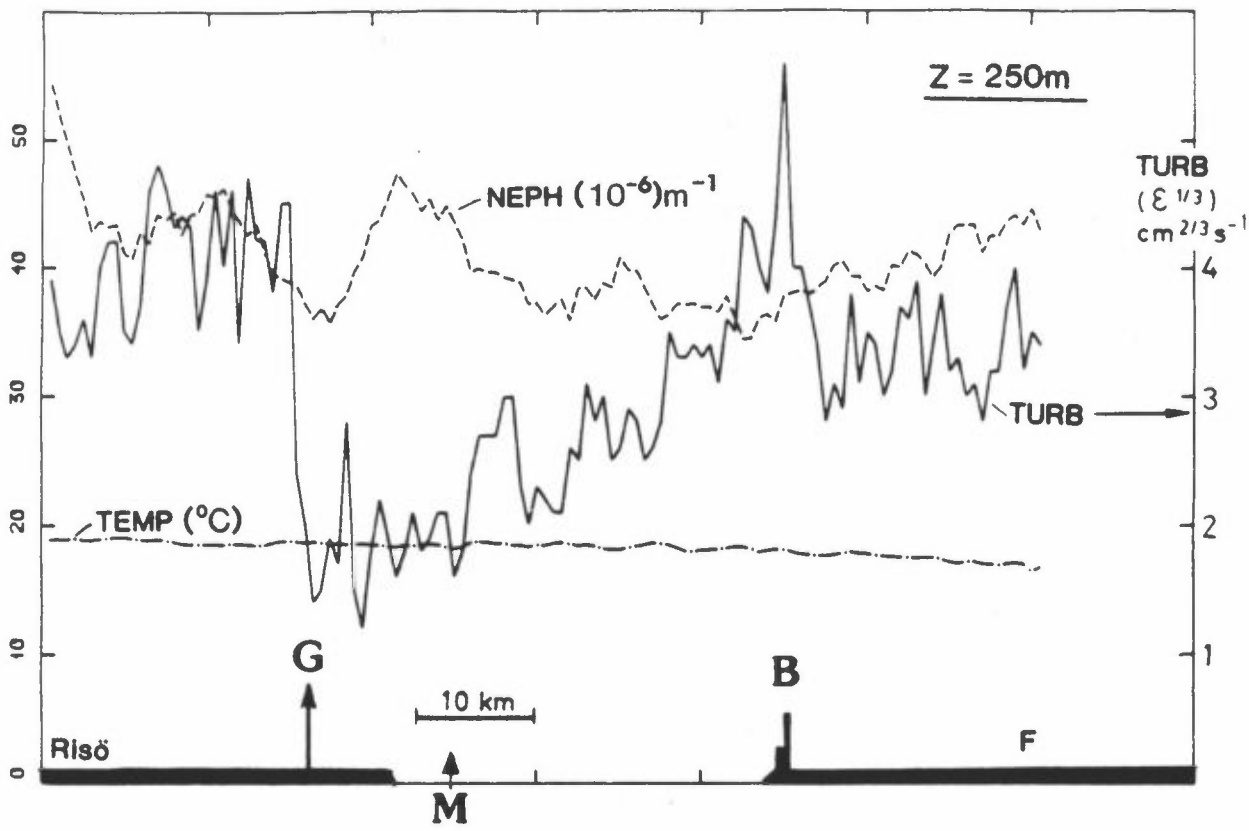

Figure 4: Measurements by the NILU aircraft along a traverse at 250 masl from Risø to Furulund, on 4 June 1984 from 11:45 CET to 12:11 CET.

The value σ_w here was 1.1 m/s. Data from the aircraft indicate a well developed turbulence over Sealand, reaching "heavy turbulence" R ~ 4.5, corresponding to σ_w = 1.27 m/s. Just before arriving at Gladsaxe on its way eastwards, about 7 km from Øresund, the plane suddenly passed through an internal boundary layer "front" and into a much less turbulent region.

The R-values (dissipation rate) slowly increased again as the plane moved further eastwards across Øresund against the wind. Just before reaching the Barsebäck power plant buildings there was another heavy turbulence. Further inland in Sweden the R-values are about about 3.5 (σ_w ~ 0.9 m/s).

Returning back from the Swedish side westwards at 170 masl the decay in small scale turbulence was significant (see Figure 5).

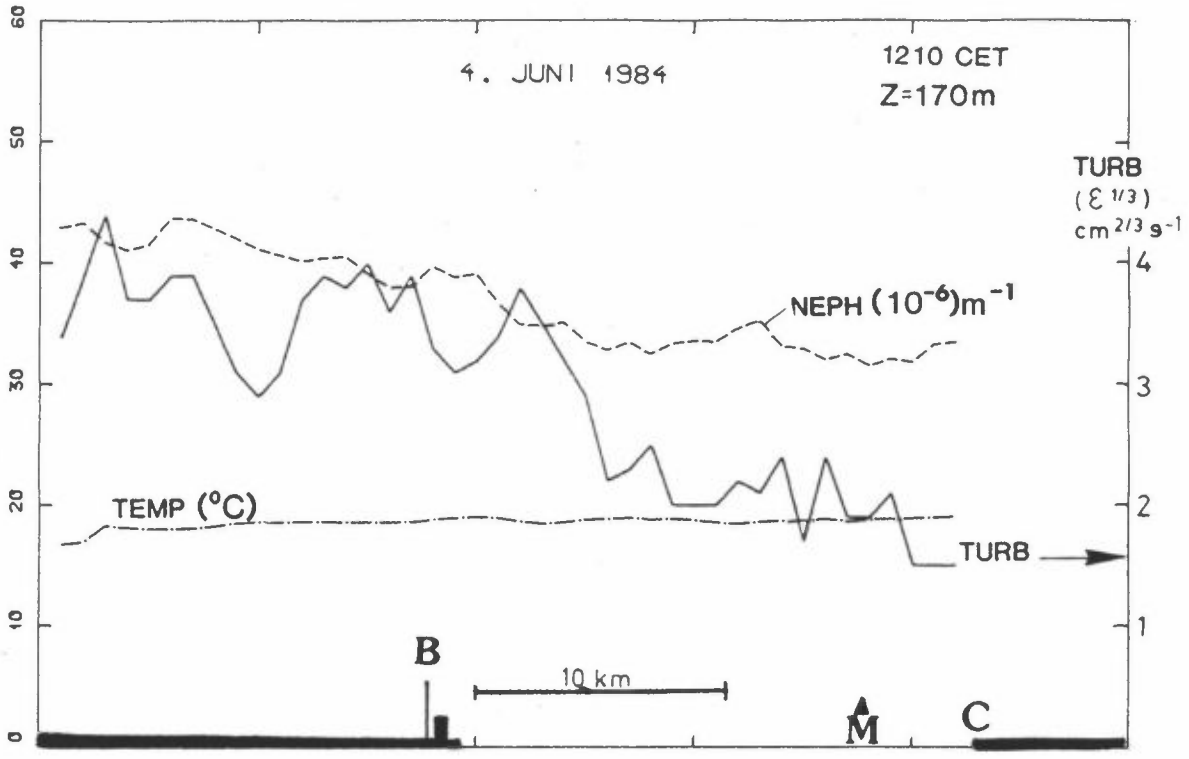

Figure 5: Measurements by the NILU aircraft along a traverse at 170 masl from 20 km east of Barsebäck to Charlottenlund, starting at 12:10 CET on 4 June 1984 (note that cast is to the left.

Again the R-values are between 3 and 4 crossing over Sweden, decreasing to less than 2 at Middelgrund.

At 12:31 CET the air craft made a vertical profile at Middelgrund, indicated by "M" in Figure 4. The results are presented in Figure 6. In this figure we can clearly "see" the height of the boundary layer over Øresund. The turbulence decays rapidly above ~800 m. Also the nephelometer data indicate that the mixing height of small particles in the atmosphere is ~600 m.

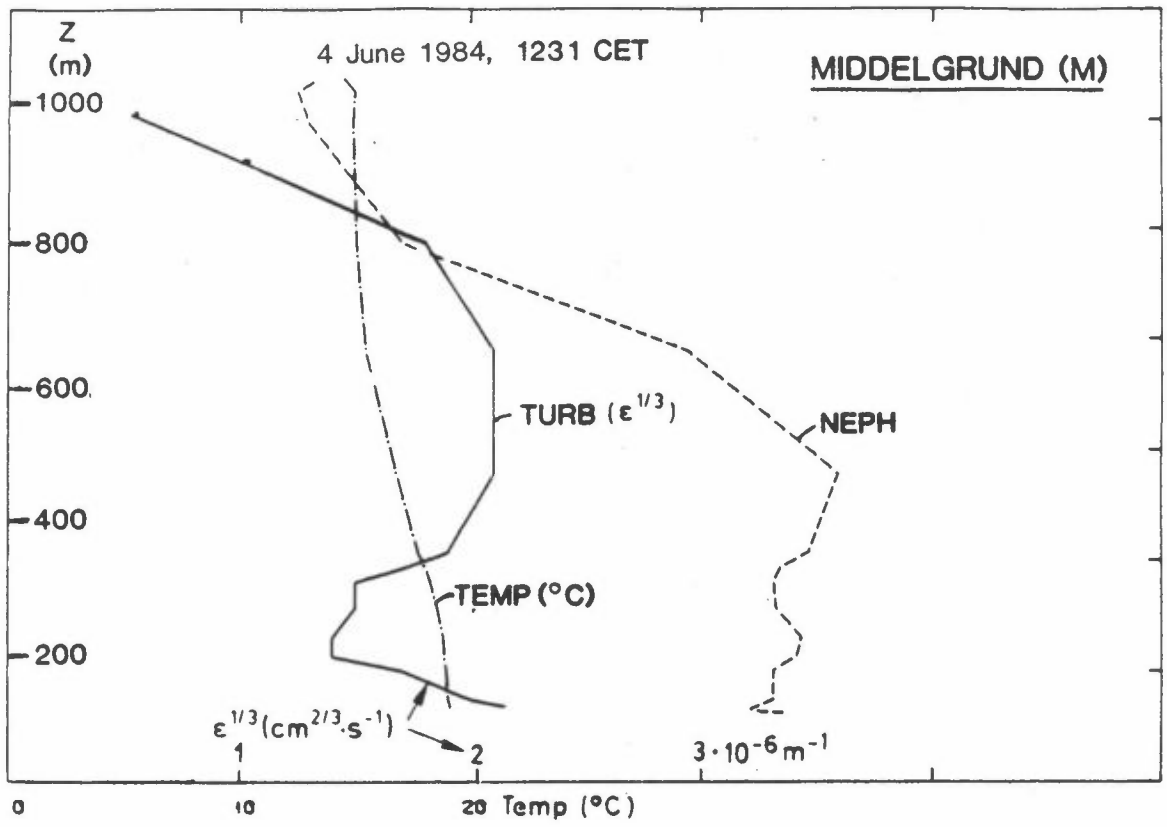

Figure 6: Vertical profiles of turbulence ($\varepsilon^{1/3}$) temperature and aerosol light scatter (Nephelometer) measured from the NILU aircraft at Middelgrund, lt 12:31 to 12:39 CET on 4 June 1984.

The bottom part of the turbulence profile indicate a lower stable internal surface boundary layer over the cold Øresund, with a height at Middelgrund of up to ~200 m. There is a lower maximum of ε between the sea surface and 200 m and a second maximum at about 500 m. Between these two layers there is very little turbulent exchange (decoupling?).

The SF_6 plume released from 95 m at the Barsebäck tower was measured between 10:46, and 11:26 CET. Cross sections were measured at 4 levels as shown in Appendix C1. Cross wind integrated concentrations are shown in Figure 7. This indicate that the plume at 11 km distance (Middelgrund) was transported on top of the lower stable surface layer between 100 and 200 m above the sea surface.

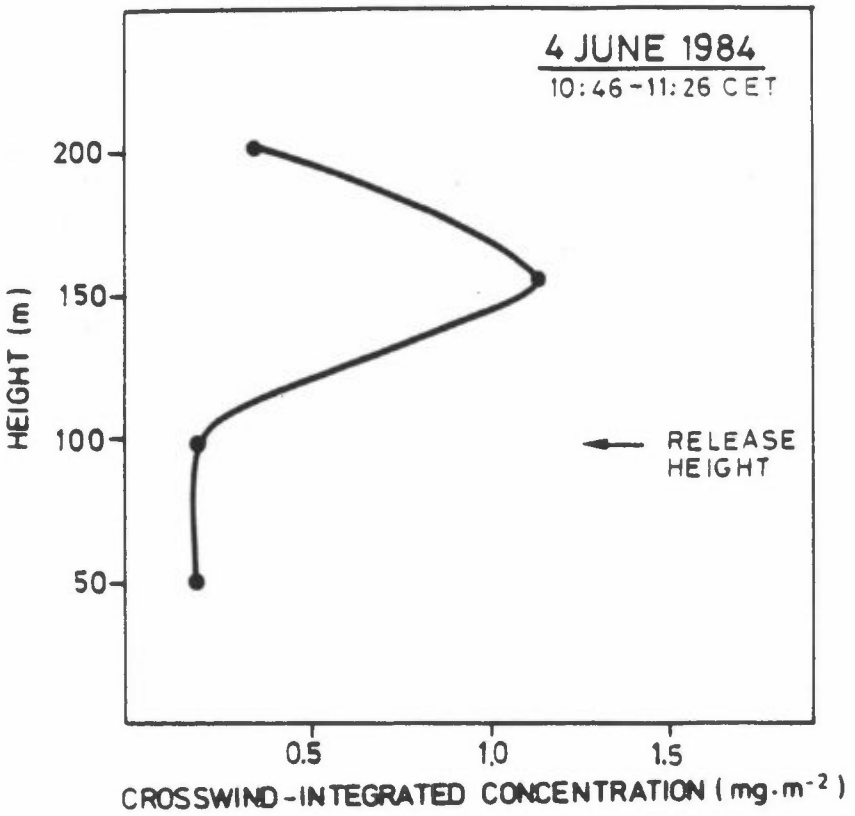

Figure 7: Cross wind integrated SF_6 concentrations determined from near instantaneous measurements performed by the aircraft at 4 levels. The traverses were made 11 km downwind at 10:46 to 11:26 on 4 June 1984.

When landing at Sturup at 13:10 CET, another vertical profile of turbulence was measured. This shows in Figure 8 that there is an increase in ε all the way down to the land surface, indicating a convective turbulent surface layer at this site.

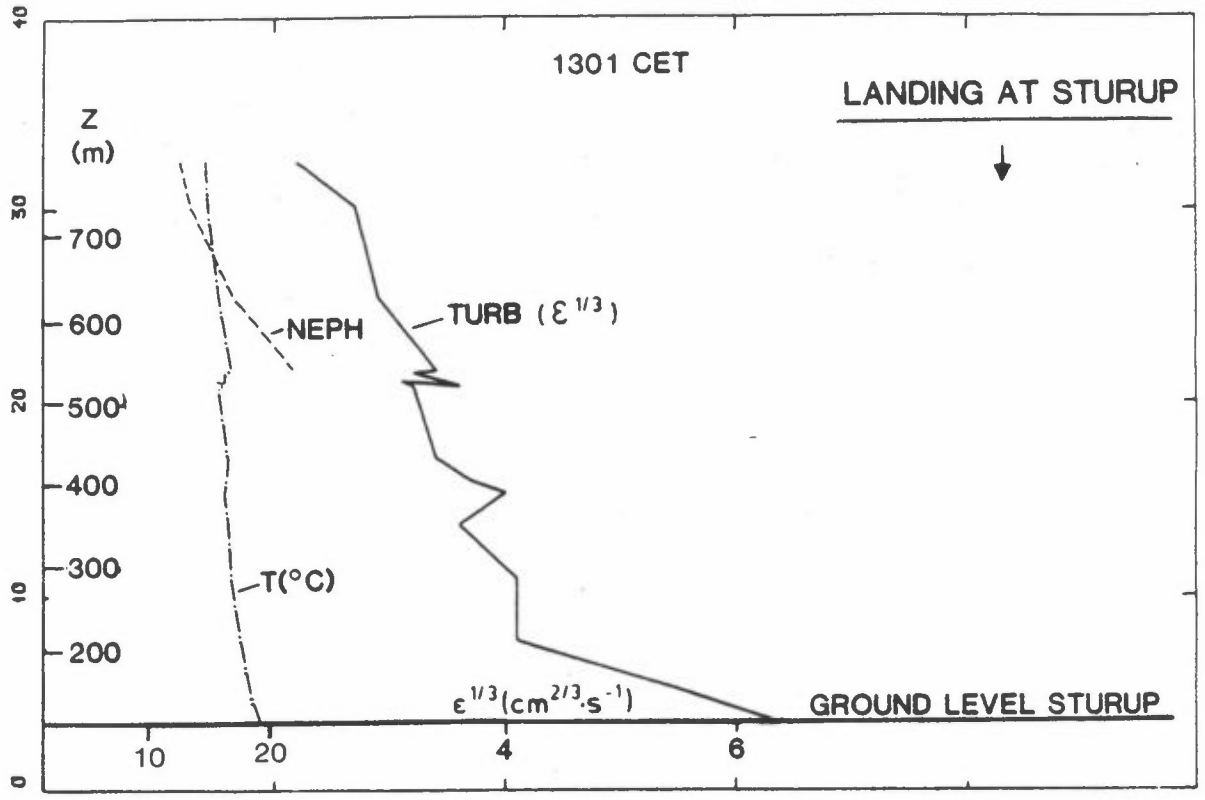

Figure 8: Vertical profiles collected during landing at Sturup air field 30 km east of Barsebäck at 13:01 CET on 4 June 1984.

4.3 5 JUNE 1984

On 5 June 1984 the air craft started out from Risø at 11:05 CET on its way eastwards, facing a 10-12 m/s wind from east. The flight level was 250-300 masl. Again we saw well developed turbulence at this level crossing Sealand, until approaching Gladsaxe (Figure 9). In this area the air craft passed through the internal boundary layer. The turbulence intensity decrease rate was not quite as dramatic as on 4 June even if the R-values decreased from 4.5 (heavy turbulence) to 1.4 (light turbulence) within 10 km.

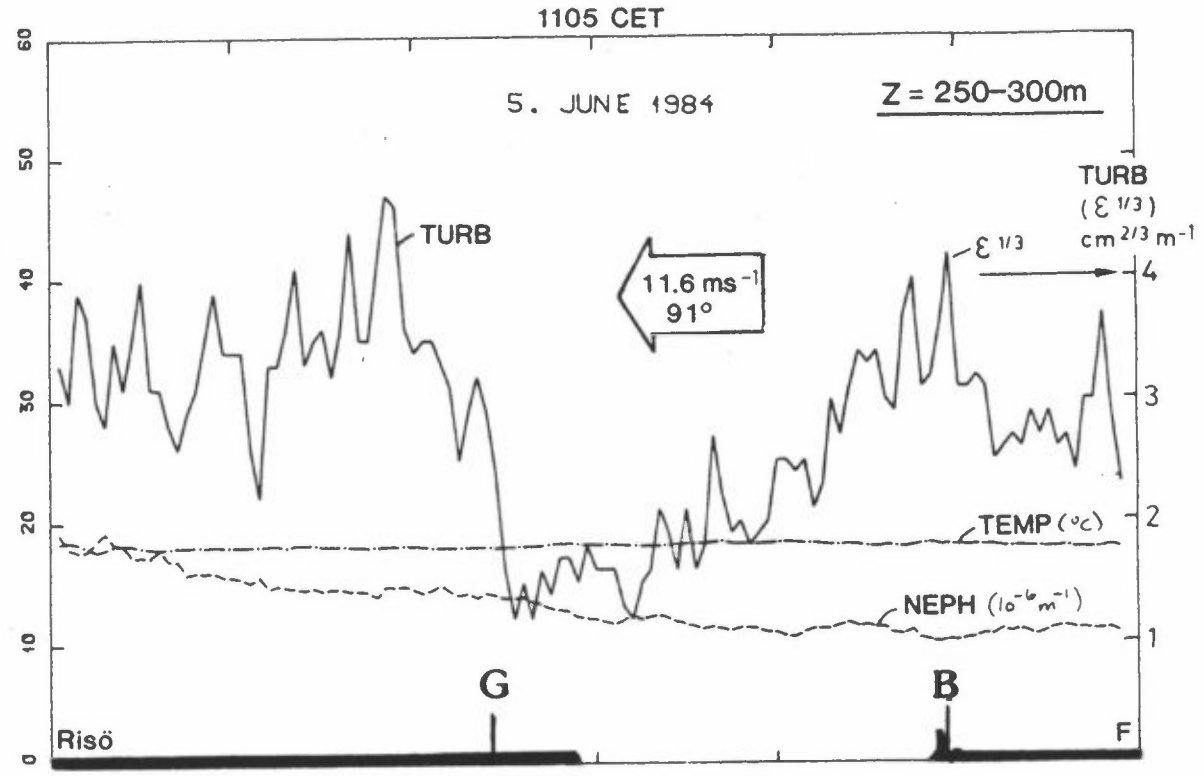

Figure 9: Measurements by the NILU aircraft along a traverse at 250-300 masl from Risø to Furulund, on 5 June 1984 from 11:05 to 11:25 CET.

The average R-value over Sealand was 3.5 corresponding to $\sigma_w \simeq 1$ m/s. At 115 m in the Gladsaxe tower σ_w was measured to 1.1 m/s. Across Øresund we detected an increasing turbulent intensity on the inertial subrange length scale, indicating again that the energy at this level of the turbulent eddies had died out crossing Øresund from the Barsebäck side.

The SF_6 plume released from 95 m at the Barsebäck tower was observed at a lower layer on 5 June than on the day before. Figure 10 shows the crosswind integrated SF_6 concentration as a function of height, measured at Middel grund ~11 km west of the release. The SF_6-concentrations are shown in Appendix C2.

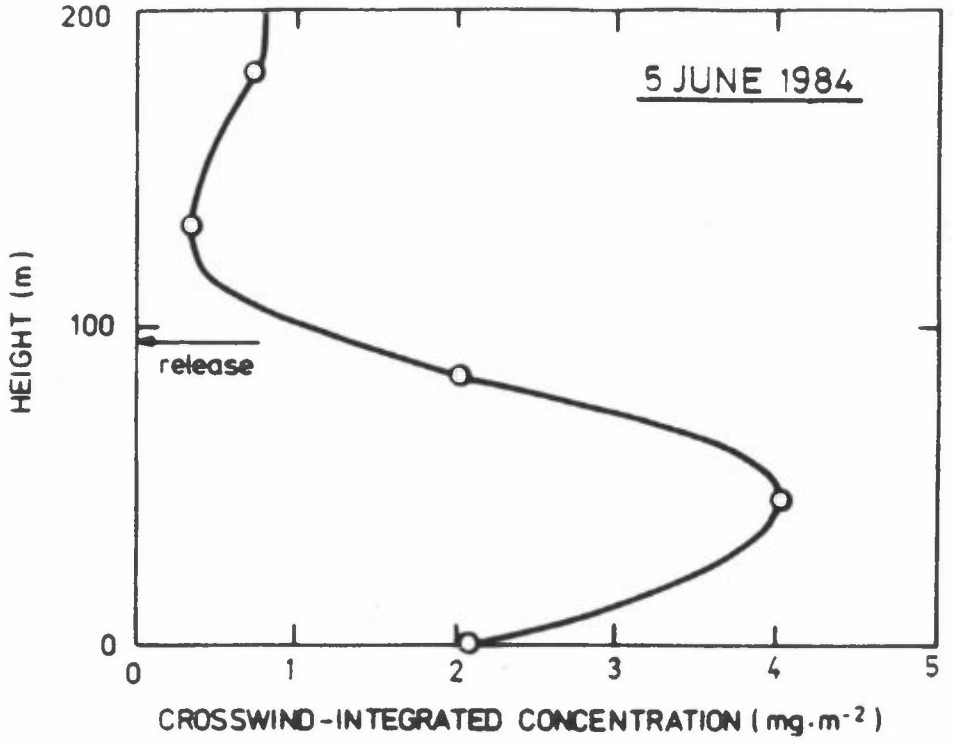

Figure 10: Crosswindintegrated SF_6 concentrations determined from near instantaneous measurements performed by the aircraft at 4 levels and a boat in Øresund. The traverses were made 11 km downwind at 10:14 to 10:46 CET on June 1984.

4.4 12 JUNE 1984

Cross sections and vertical profiles of small scale turbulence, temperature and nephelometer readings are shown in Figure 11 and 12.

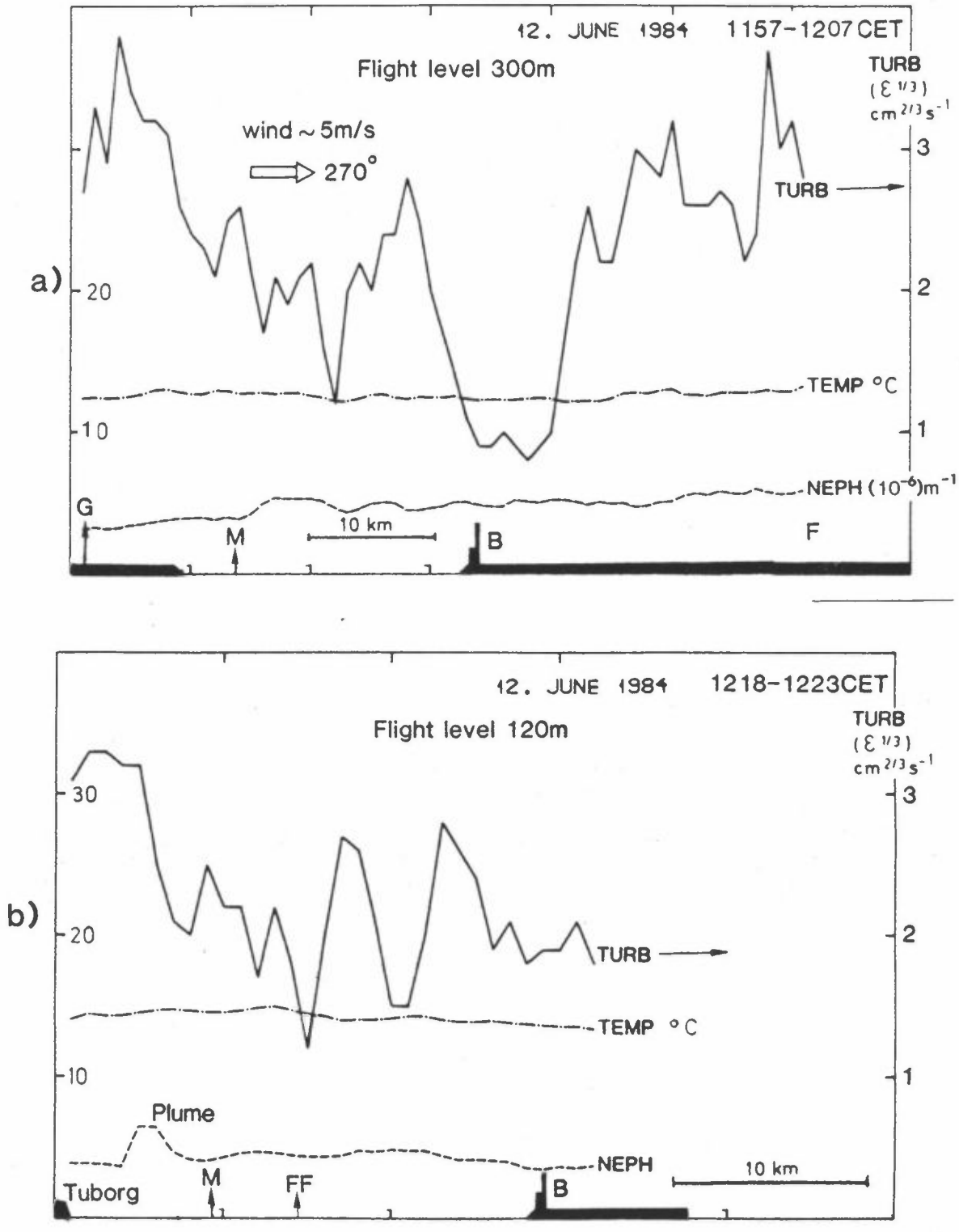

Figure 11: Measurements by the NILU aircraft on 12 June 1984, along a traverse from west to east.

a) at 300 masl between Gladsaxe and Furulund at 11:57 to 12:14 CET.
b) At 120 masl between Tuborg and Barsebäck at 12:18 to 12:23 CET.

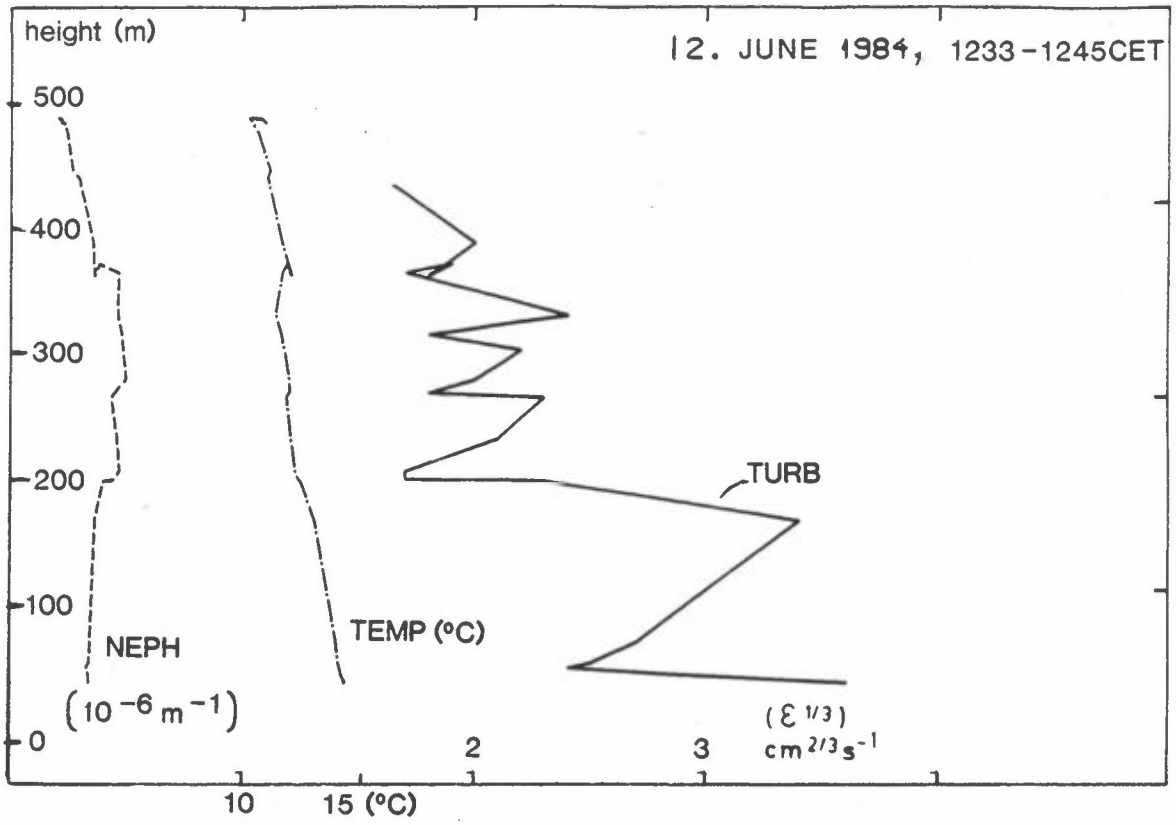

Figure 12: Vertical profiles collected over Øresund between Barsebäck and Ven on 12 June 1984 between 12:33 and 12:45 CET.

The wind on this day was from around south-west. At Barsebäck at 12 CET the wind was 6.6 m/s from SSW. The wind was variable changing between west at 08:00 CET to south at 14:00 CET. The horizontal profiles shown in Figure 11 indicate a decreasing turbulence from Sealand towards the Swedish site at Barsebäck (opposite to the other cases with winds from east).

5 GROUND LEVEL SF_6-MEASUREMENTS

The SF_6 tracer gas was measured along highway E4 on 4 June and 5 June 1984 and near Barsebäck on 9 June 1984. The SF_6-concentrations measured are presented in Appendix D.

5.1 4 JUNE 1984

The NILU crew arrived in the area with car just before sampling were to be started. The SF_6 samplers we managed to operate along E4 indicated that we had SF_6 at 11:45 - 12:15 CET just west of the Gladsaxe Tower. The maximum 30 min average concentration was 250 ng/m^3, which is in accordance with 229 ng/m^3 measured by MSTL 6 km further east. (Lyck and Olesen, 1986.)

5.2 5 JUNE 1984

SF_6-concentrations were collected along E4 between 11:00 and 12:00 CET. The measured concentration profiles are shown in Figure 13. As can be seen the position and magnitude of the maximum SF_6 concentration varied somewhat from one 15 min period to the other, starting about 1.5 km south of the Gladsaxe tower moving north to the latitude of G during the last 15 min period. The maximum concentration varied between 840 and 920 ng/m^3. At traverses further east (closer to the Barsebäck release point) 20 min average concentrations of ~1400 ng/m^3 were measured (Lyck and Olesen, 1986).

A 15 min average σ_y-value was estimated at this distance (~30 km from the release) to vary between 950 and 1100 m, which correspond to the plume size to be expected during near neutral conditions. To ascertain mass consistency the average well mixed plume height during this experiment had to be 250-300 m at this distance.

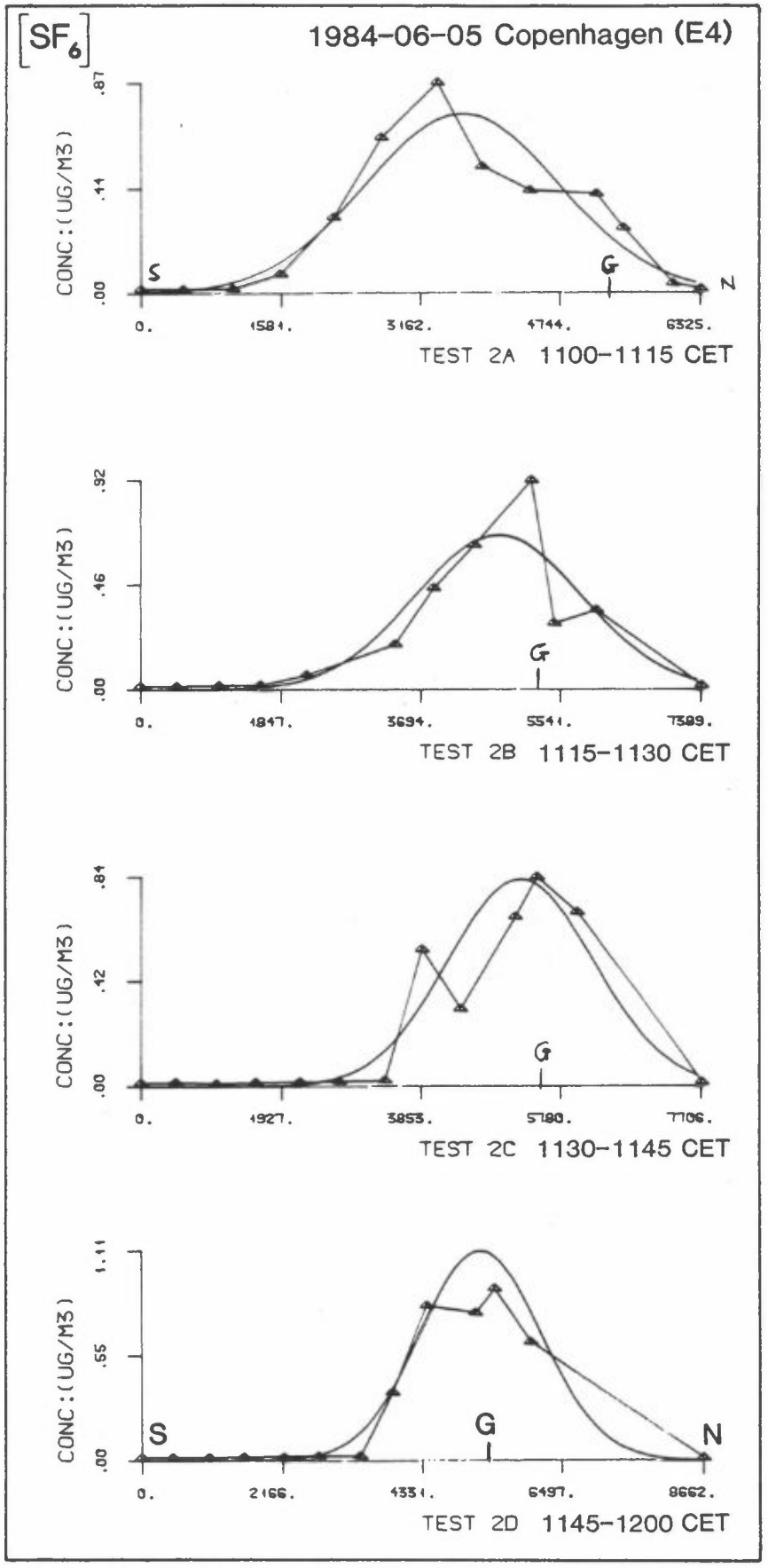

Figure 13: The SF_6-concentration profiles along E4 from south (S) to north (N) between 11:00 and 12:00 CET. The position of the Gladsaxe tower (G) is indicated. The best fit Gaussian distributions are also given.

5.3 9 JUNE 1984

On 9 June 1984 the weather conditions did not allow experiments with transport of tracers across Øresund to be conducted.

The NILU crew staying at Barsebäck conducted a mini experiment, releasing SF_6 from the 95 m level at the tower. The release took place betwen 14:11 and 15:31 CET at a rate of 1.65 g/s. The weather conditions were variable, with winds mainly from around south west.

Table 2: Meteorological conditions during the experiment on 9 June 1984.

B A R S E B Ä C K.

DATE	TIME	W I N D S P E E D 5.1	11.1	20.7	41.4	68.7	95.1	WIND DIR. 11	95	PRESSURE	NET RAD.	GLOB.RAD.
840609	14.30	3.65	5.28	6.50	7.68	8.57	9.04	246.0	231.0	1008.7	69.8	111.3
840609	14.40	3.96	5.58	6.82	8.04	9.02	9.46	235.0	234.0	1008.7	51.6	82.0
840609	14.50	3.51	5.35	6.55	7.48	7.99	8.13	217.0	227.0	1008.8	37.9	64.1
840609	15. 0	3.56	5.12	5.91	6.93	7.44	7.58	213.0	209.0	1008.8	56.9	86.8
840609	15.10	3.96	5.72	6.43	7.04	7.23	8.25	201.0	219.0	1008.8	50.1	72.6
840609	15.20	3.05	4.27	4.83	5.26	5.41	6.01	211.0	218.0	1008.8	42.5	70.7
840609	15.30	2.53	3.71	4.07	4.43	5.01	6.18	188.0	208.0	1008.6	98.6	128.2
840609	15.40	2.77	4.29	4.76	5.36	6.05	6.89	192.0	209.0	1008.5	46.3	70.7
840609	15.50	4.27	6.06	6.80	7.41	7.76	8.33	203.0	211.0	1008.4	84.2	134.8
840609	16. 0	3.94	5.69	6.48	7.04	7.32	7.56	199.0	219.0	1008.2	130.5	171.6
840609	16.10	3.85	5.48	6.06	6.73	7.02	7.56	222.0	223.0	1008.3	87.2	107.5

B A R S E B Ä C K.

HOURLY MEAN VALUES, with standard error of mean.

DATE	TIME	W I N D S P E E D 5.1	11.1	20.7	41.4	68.7	95.1	WIND DIR. 11	95	PRESSURE	NET RAD.	GLOB.RAD
840609	15. 0	3.52	4.96	5.95	7.01	7.83	8.28	230.0	228.0	1008.7	78.0	116.0
		0.12	0.25	0.35	0.37	0.36	0.33	4.0	3.0	0.4	15.7	20.1
840609	16. 0	3.42	4.96	5.56	6.09	6.46	7.20	200.0	214.0	1008.5	75.4	108.1
		0.30	0.40	0.47	0.50	0.46	0.41	4.0	3.0	0.4	14.4	17.5
840609	17. 0	2.93	4.22	4.86	5.74	6.66	7.66	231.0	237.0	1008.0	61.4	87.7
		0.20	0.30	0.31	0.24	0.15	0.32	8.0	4.0	0.4	13.9	16.9

SF_6-concentrations are given in Appendix D3 and summarized in Figure 14.

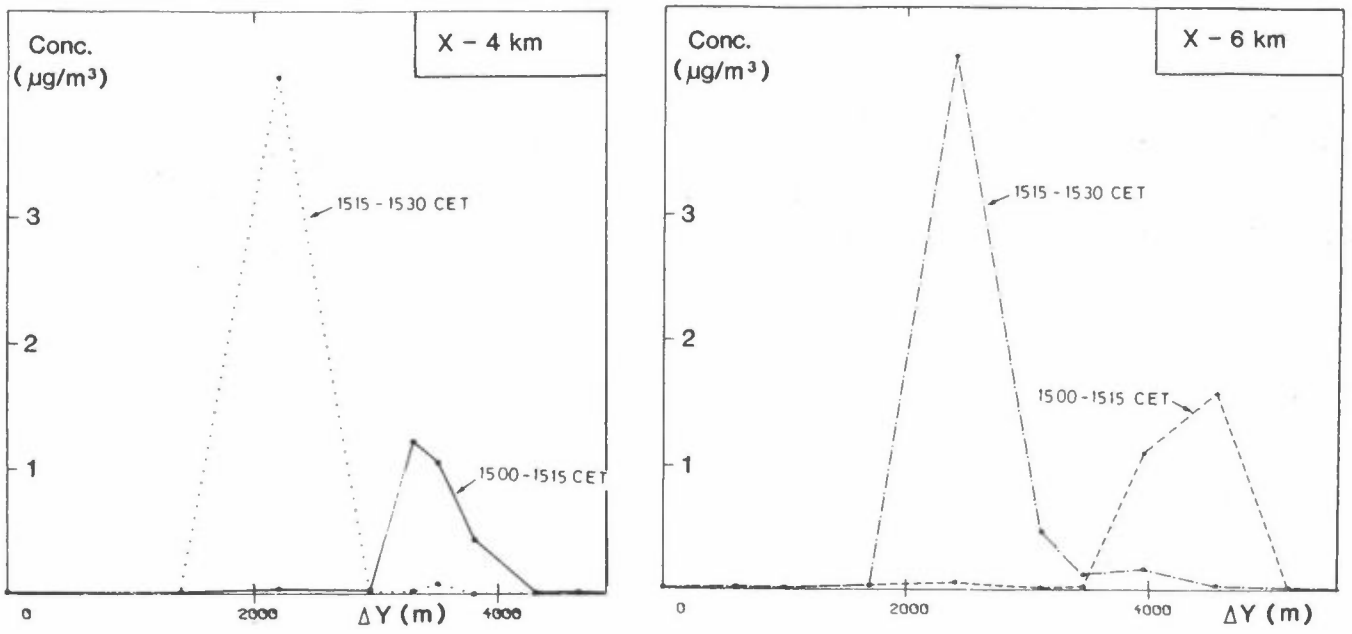

Figure 14: SF_6 concentrations crosswind at two distances downwind from the Barsebäck tower.

The concentration distributions show a clear shift in wind directions from the first to the second 15 min average concentration as also indicated from the meterological data. Especially the second 15 min average show a very sharp prolonged plume touching the ground at some distance from the release point (~1 km) staying at a maximum concentrations of ~4 ng/m^3 for more than 5 km.

6 RADIOSONDE AT BALLERUP

A mini sonde was launched at Ballerup (UTM 334.3, 6176.8) 8 km WSW of the Gladsaxe tower, at 11:40 CET on 5 June 1984.

The temperature profile shown in Figure 15 reveals a kink between 600 and 700 m above the ground.

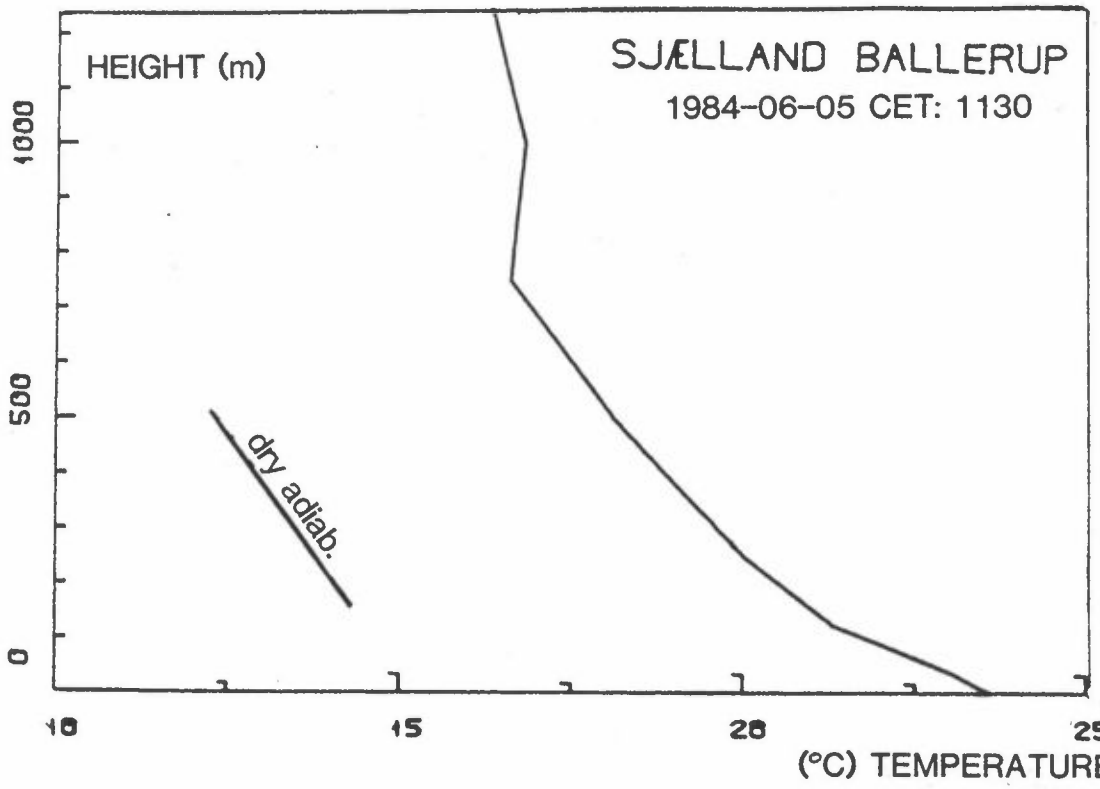

Figure 15: Temperature profile collected at Ballerup on 5 June 1984 at 11:30 CET.

Near the surface unstable conditions were measured, between ~700 and 1000 m a stable layer capped the convective surface layer and above ~1000 m near neutral conditions was measured. Wind data from the same ascend are presented in Appendix E, showing 8 m/s wind from 80 deg at the surface, increasing to ~17 m/s from east (~90 deg) at ~ 600 m.

7 SUMMARY

In summary the NILU aircraft measurements have shown the build up of internal boundary layers across the land water land surface of the Øresund region. An artistic picture to summarize some of the results, is presented in Figure 16, including the mini radiosonde ascend taken at Ballerup (Sealand) on 5 June 1984. The figure shows that with winds from east, a stable surface layer slowly develops over the Øresund, while an unstable internal boundary layer quickly builds up over Sealand (at a rate of 35 m:1000 m). Turbulence data taken over Øresund indicated that there was an overall mixing height (remaining from the

advection over southern Sweden) of about 800 m. We have seen an overall multilayer complexity, which should be of great interest for modellers.

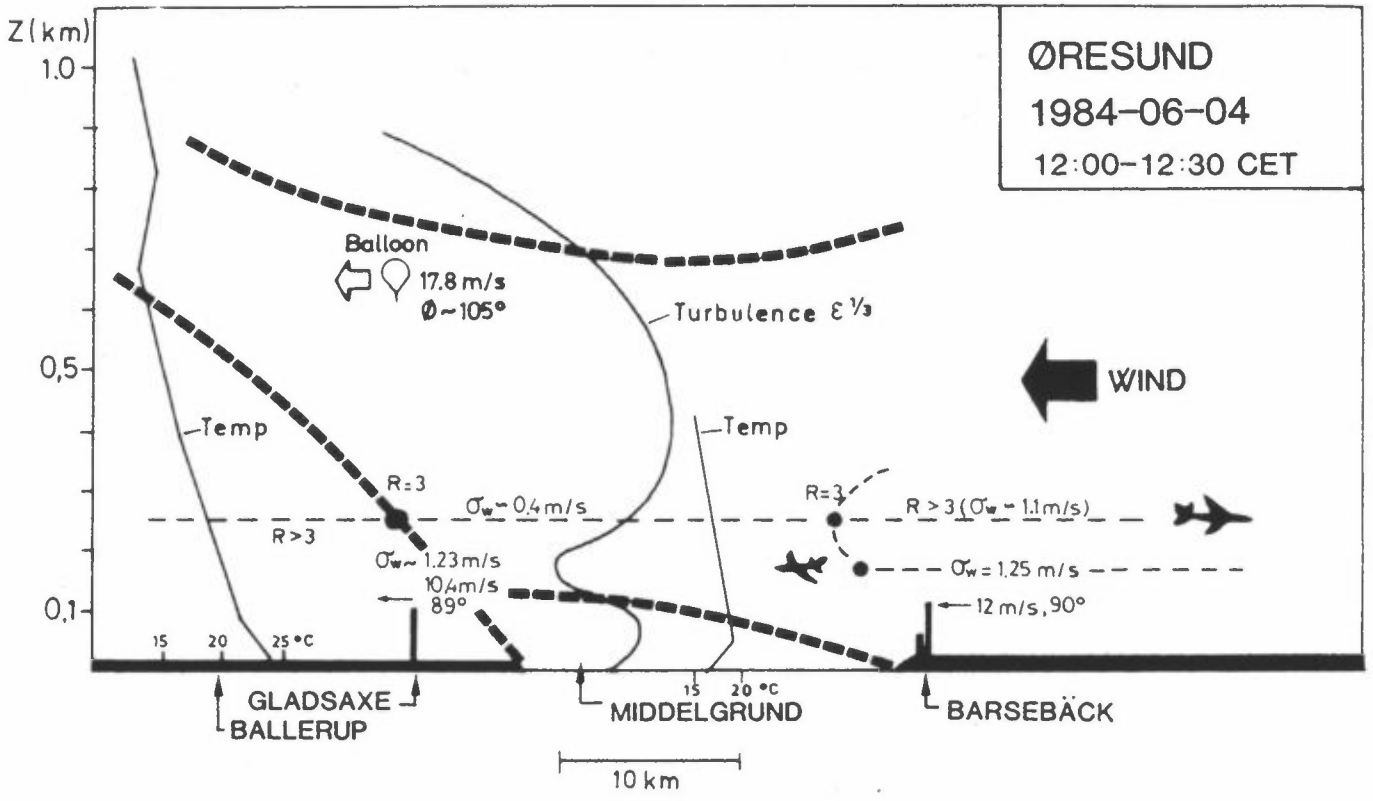

Figure 16: A vertical east-west cross section of the Øresund region on 4 June 1984 at 12:00 - 12:30 CET. Boundary layer heights are indicated based upon various meteorological measurements.

8 ACKNOWLEDGEMENT

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APPENDIX A

Summary of aircraft positions,
height and temperature at given
hours of the experiments.

Table A1:

DATE	CET	EVENT	FLIGHT LEVEL (mb)	HEIGHT (m)	TEMP (C)	REMARKS (CPH)
			1007.0			QNH AT CPH
840529	1008	2	971.4	302	16.15	NEAR MIDDELGRUND
840529	1021	5	975.4	268	16.47	NEAR MIDDELGRUND
840529	1039	13	989.9	145	17.81	NEAR MIDDELGRUND
840529	1050	18	995.9	94	18.55	NEAR MIDDELGRUND
840529	1055	21	1001.1	50	18.34	NEAR MIDDELGRUND
840529	1111	26	994.5	106	18.49	NEAR MIDDELGRUND
						QNH = 1007 mb
840529	1138	1		400	16.27	RISØ MAST
840529	1148	2		431	16.99	COASTLINE
840529	1155	3		405	17.15	COAST 2km NORTH OF BB
840529	1158	4		388	17.06	RAILWAY TRACK
840529	1202	5		284	18.14	COASTLINE BARSEL
840529	1207	6		290	17.70	TUBORG KAY
840529	1213	7		230	18.75	COAST BB
840529	1214	8		215	18.71	COAST BB
840529	1217	10		181	18.57	FLAK FORT
840529	1218	11		190	18.25	TUBORG KAY
840529	1224	12		130	19.58	BARSEBACK
840604	1048	3	984.7	206	18.92	MIDDELGRUND
840604	1054	7	994.1	126	19.38	MIDDELGRUND
840604	1120	4	998.6	88	20.30	MIDDELGRUND
840604	1124	14	1004.7	36	19.91	MIDDELGRUND
840604	1144	19	976.3	277	18.96	RISØ
840604	1153	21	977.1	270	18.78	GLADSAXE
840604	1203	24	978.7	257	18.15	BARSEBACK MAST
840604	1215	5	988.4	175	18.83	BARSEBACK MAST
840604	1219	6	988.7	172	18.89	MIDDELGRUND
840604	1221		1009.0			QNH AT CPH
840604	1224	9	999.8	78	19.98	MIDDELGRUND
840604	1226	11	995.4	115	19.18	BARSEBACK
840604	1231	13	1001.7	62	19.30	MIDDELGRUND
840604	1251	19	903.4	895	14.50	FLAK FORT
			1010.0			QNH AT CPH
			1006.0			QNH AT CPH
840605	0950	1	996.7	79	18.46	TEMP STURUP +19 DEWBINT +12
840605	1014	6	984.3	175	18.47	FLAK FORT
840605	1017	9	987.8	146	18.75	FLAK FORT
840605	1043	14	994.1	92	19.66	FLAK FORT
840605	1046	17	1000.5	38	18.59	FLAK FORT
840605	1105	21	975.7	250	18.40	RISØ
840605	1113	22	969.5	301	17.90	GLADSAXE
840605	1122	24	969.7	299	18.03	BARSEBACK
840605	1133	4	982.4	191	18.81	BARSEBACK
840605	1136	7	981.2	202	18.96	MIDDELGRUND
840605	1139	9	993.5	97	19.98	MIDDELGRUND
840605	1144	11	993.6	97	20.12	BARSEBACK
840605	1148	14	997.6	63	19.87	MIDDELGRUND
840605	1149	16	1001.7	28	18.83	MIDDELGRUND
840605	1154	17	1000.3	46	20.76	BARSEBACK
840605	1218		899.8	891	14.82	MIDDELGRUND
			1026.0			QNH AT CPH

Table A2:

DATE	CET	EVENT	FLIGHT LEVEL (mb) 1007.0	HEIGHT (m)	TEMP (C)	REMARKS (CPH) QNH AT CPH
840612	1023	2		212	12.35	BRAVO
840612	1024	3		212	12.55	FLAK
840612	1030	4		210	12.26	ALPHA
840612	1037	5		198	12.52	ALPHA
840612	1043	8		214	12.57	FLAK
840612	1044	9		210	12.39	BRAVO
840612	1045	10		170	12.48	BRAVO
840612	1046	11		153	13.03	ABEAM FLAK
840612	1051	14		160	12.74	ALPHA
840612	1108	15		130	12.95	ALPHA
840612	1113	18		126	13.68	FLAK
840612	1115	19		140	13.01	BRAVO
840612	1116	20		100	13.18	BRAVO
840612	1117	21		96	13.54	FLAK
840612	1122	24		110	13.44	ALPHA
840612	1136	25		64	14.21	ALPHA
840612	1142	28		54	14.20	BRAVO
840612	1158	30		300	12.36	GLADSAXE
840612	1159	31		305	13.03	KYSTLINJE
840612	1203	32		304	12.35	BARSEBACK
840612	1207	33		306	12.82	VENDEPKT ØST
840612	1214	1		210	12.74	BARSEBACK
840612	1217	3		200	13.74	FLAK
840612	1217	4		216	13.84	MIDDELGRUND
840612	1218	5		190	14.04	TUBORG KAY
840612	1220	6		140	14.50	MIDDELGRUND
840612	1220	7		120	14.66	FLAK
840612	1223	8		125	13.58	BARSEBACK PIPE
840612	1223	9		126	13.49	BARSEBACK MAST
840612	1223	10		140	13.30	VENDEPKT ØST
840612	1225	11		80	13.99	BARSEBACK
840612	1228	12		74	15.02	FLAK
840612	1229	13		71	15.07	ABEAM MIDDELGRUND
840612	1229	14		120	14.76	TUBORG KAY
840612	1230	15		54	15.56	MIDDELGRUND
840612	1233	16		48	14.29	BARSEBACK
840612	1245	19		480	10.82	MIDT MELLOM HELSINKI/ ?
840612	1252	20		445	11.18	ABEAM BARSEBACK
840612	1255	21		504	11.32	OVER TANKENE.MALMØ
840612	1303	22		476	11.18	KYSTLINJE VED BØSTE

APPENDIX B

SELECTED TRAVERSES

DATE TIME = CET

EVENT = NUMBER (AND TIME)

LA = LATITUDE

LO = LONGITUDE

R = TURBULENCE ($\varepsilon^{1/3}$) (see test)

IAS = INDICATED AIRSPEED

FLL = FLIGHT LEVEL (0.01 FT) WITH REFERENCE 1013 MB (CORRECTED HEIGHTS GIVEN IN APPENDIX A)

A/D = ASCEND/DESCEND OF AIRCRAFT

TEMP = DRY TEMPERATURE MEASURED WITH A ROSEMOUTH MODEL 102E SENIOR (0^0)

DP = DEW POINT TEMPERATURE (0^0)

F = FILTER SAMPLER FLOW (NOT IN USE)

NEPM = B_{SCAT}-VALUES FROM NEPHELOMETER (M^{-1})

29. 5.84

TOTAL LENGTH:5660M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
290584	110939	90	55470	12437	1	3
290584	110941	90			2	3
290584	110943	90			3	3
290584	110945	90			4	3
290584	110947	90			5	3
290584	110949	90			6	3
290584	110951	90			7	3
290584	110953	90			8	3
290584	110955	90			9	3
290584	110957	90			10	3
290584	110959	90			11	3
290584	111001	90			12	4
290584	111003	90			13	4
290584	111005	90			14	4
290584	111007	90			15	5
290584	111009	90			16	3
290584	111011	90			17	20
290584	111013	90			18	20
290584	111015	90			19	5
290584	111017	90			20	3
290584	111019	90			21	2
290584	111021	90			22	4
290584	111023	90			23	7
290584	111025	90			24	5
290584	111027	90			25	4
290584	111029	90			26	4
290584	111031	90			27	4
290584	111033	90			28	3
290584	111035	90			29	2
290584	111037	90			30	2
290584	111039	90			31	2
290584	111041	90			32	2
290584	111043	90			33	2
290584	111045	90			34	3
290584	111047	90			35	8
290584	111049	90			36	6
290584	111051	90			37	4
290584	111053	90			38	8
290584	111055	90			39	20
290584	111057	90			40	21
290584	111059	90			41	40
290584	111101	90			42	62
290584	111103	90			43	6
290584	111105	90			44	6
290584	111107	90	55442	12441	45	4

TOTAL LENGTH:5970M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
290584	111935	45	55455	12441	46	2
290584	111937	45			47	2
290584	111939	45			48	1
290584	111941	45			49	2
290584	111943	45			50	2
290584	111945	45			51	2
290584	111947	45			52	12
290584	111949	45			53	1
290584	111951	45			54	1
290584	111953	45			55	1
290584	111955	45			56	1
290584	111957	45			57	1
290584	111959	45			58	1
290584	112001	45			59	6
290584	112003	45			60	12
290584	112005	45			61	6
290584	112007	45			62	2
290584	112009	45			63	1
290584	112011	45			64	1
290584	112013	45			65	1
290584	112015	45			66	1
290584	112017	45			67	1
290584	112019	45			68	1
290584	112021	45			69	1
290584	112023	45			70	1
290584	112025	45			71	1
290584	112027	45			72	1
290584	112029	45			73	1
290584	112031	45			74	1
290584	112033	45			75	1
290584	112035	45			76	1
290584	112037	45			77	1
290584	112039	45			78	1
290584	112041	45			79	1
290584	112043	45			80	1
290584	112045	45			81	1
290584	112047	45			82	1
290584	112049	45			83	1
290584	112051	45			84	1
290584	112053	45			85	1
290584	112055	45			86	3
290584	112057	45			87	3
290584	112059	45			88	4
290584	112101	45			89	4
290584	112103	45	55478	12438	90	4

4. 6.84

TOTAL LENGTH:5450M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
040684	104645	206	554725	12436	1	0
040684	104647	206			2	0
040684	104649	206			3	0
040684	104651	206			4	0
040684	104653	206			5	0
040684	104655	206			6	0
040684	104657	206			7	0
040684	104659	206			8	0
040684	104701	206			9	0
040684	104703	206			10	0
040684	104705	206			11	0
040684	104707	206			12	0
040684	104709	206			13	0
040684	104711	206			14	0
040684	104713	206			15	0
040684	104715	206			16	0
040684	104717	206			17	0
040684	104719	206			18	1
040684	104721	206			19	35
040684	104723	206			20	32
040684	104725	206			21	33
040684	104727	206			22	21
040684	104729	206			23	10
040684	104731	206			24	0
040684	104733	206			25	67
040684	104735	206			26	0
040684	104737	206			27	1
040684	104739	206			28	190
040684	104741	206			29	60
040684	104743	206			30	21
040684	104745	206			31	116
040684	104747	206			32	45
040684	104749	206			33	36
040684	104751	206			34	3
040684	104753	206			35	0
040684	104755	206			36	2
040684	104757	206			37	0
040684	104759	206			38	0
040684	104801	206			39	0
040684	104803	206			40	0
040684	104805	206			41	0
040684	104807	206			42	0
040684	104809	206			43	0
040684	104811	206			44	0
040684	104813	206	55433	12438	45	0

TOTAL LENGTH:5395M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
040684	105239	130	55426	124405	46	0
040684	105241	130			47	0
040684	105243	130			48	0
040684	105245	130			49	0
040684	105247	130			50	0
040684	105249	130			51	0
040684	105251	130			52	0
040684	105253	130			53	0
040684	105255	130			54	0
040684	105257	130			55	0
040684	105259	130			56	0
040684	105301	130			57	7
040684	105303	130			58	6
040684	105305	130			59	117
040684	105307	130			60	40
040684	105309	130			61	48
040684	105311	130			62	80
040684	105313	130			63	167
040684	105315	130			64	25
040684	105317	130			65	159
040684	105319	130			66	333
040684	105321	130			67	255
040684	105323	130			68	306
040684	105325	130			69	324
040684	105327	130			70	297
040684	105329	130			71	158
040684	105331	130			72	163
040684	105333	130			73	110
040684	105335	130			74	69
040684	105337	130			75	100
040684	105339	130			76	94
040684	105341	130			77	21
040684	105343	130			78	0
040684	105345	130			79	5
040684	105347	130			80	0
040684	105349	130			81	5
040684	105351	130			82	0
040684	105353	130			83	0
040684	105355	130			84	0
040684	105357	130			85	0
040684	105359	130			86	0
040684	105401	130			87	0
040684	105403	130			88	0
040684	105405	130			89	0
040684	105407	130	554645	12443	90	0

4. 6.84

TOTAL LENGTH:5340M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
040684	111846	90	55463	12440	1	0
040684	111848	90			2	0
040684	111850	90			3	0
040684	111852	90			4	0
040684	111854	90			5	0
040684	111856	90			6	0
040684	111858	90			7	0
040684	111900	90			8	0
040684	111902	90			9	0
040684	111904	90			10	0
040684	111906	90			11	0
040684	111908	90			12	0
040684	111910	90			13	0
040684	111912	90			14	0
040684	111914	90			15	0
040684	111916	90			16	0
040684	111918	90			17	0
040684	111920	90			18	0
040684	111922	90			19	2
040684	111924	90			20	7
040684	111926	90			21	7
040684	111928	90			22	28
040684	111930	90			23	36
040684	111932	90			24	162
040684	111934	90			25	0
040684	111936	90			26	11
040684	111938	90			27	19
040684	111940	90			28	27
040684	111942	90			29	0
040684	111944	90			30	0
040684	111946	90			31	0
040684	111948	90			32	0
040684	111950	90			33	0
040684	111952	90			34	0
040684	111954	90			35	0
040684	111956	90			36	0
040684	111958	90			37	0
040684	112000	90			38	0
040684	112002	90			39	0
040684	112004	90			40	0
040684	112006	90			41	0
040684	112008	90			42	0
040684	112010	90			43	3
040684	112012	90			44	0
040684	112014	90	55431	12443	45	0

TOTAL LENGTH:5320M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
040684	112434	36	554255	12443	46	0
040684	112436	36			47	0
040684	112438	36			48	0
040684	112440	36			49	0
040684	112442	36			50	0
040684	112444	36			51	0
040684	112446	36			52	0
040684	112448	36			53	0
040684	112450	36			54	0
040684	112452	36			55	0
040684	112454	36			56	0
040684	112456	36			57	0
040684	112458	36			58	0
040684	112500	36			59	0
040684	112502	36			60	0
040684	112504	36			61	0
040684	112506	36			62	0
040684	112508	36			63	0
040684	112510	36			64	0
040684	112512	36			65	0
040684	112514	36			66	22
040684	112516	36			67	4
040684	112518	36			68	228
040684	112520	36			69	44
040684	112522	36			70	40
040684	112524	36			71	0
040684	112526	36			72	1
040684	112528	36			73	0
040684	112530	36			74	0
040684	112532	36			75	0
040684	112534	36			76	0
040684	112536	36			77	0
040684	112538	36			78	0
040684	112540	36			79	0
040684	112542	36			80	0
040684	112544	36			81	0
040684	112546	36			82	0
040684	112548	36			83	0
040684	112550	36			84	0
040684	112552	36			85	0
040684	112554	36			86	0
040684	112556	36			87	0
040684	112558	36			88	0
040684	112600	36			89	0
040684	112602	36	55456	12437	90	0

5. 6.84

TOTAL LENGTH:5720M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
050684	101235	175	55453	12438	1	0
050684	101237	175			2	5
050684	101239	175			3	5
050684	101241	175			4	0
050684	101243	175			5	0
050684	101245	175			6	5
050684	101247	175			7	0
050684	101249	175			8	0
050684	101251	175			9	2
050684	101253	175			10	0
050684	101255	175			11	0
050684	101257	175			12	5
050684	101259	175			13	0
050684	101301	175			14	2
050684	101303	175			15	3
050684	101305	175			16	78
050684	101307	175			17	120
050684	101309	175			18	129
050684	101311	175			19	125
050684	101313	175			20	165
050684	101315	175			21	39
050684	101317	175			22	31
050684	101319	175			23	8
050684	101321	175			24	70
050684	101323	175			25	94
050684	101325	175			26	53
050684	101327	175			27	56
050684	101329	175			28	11
050684	101331	175			29	64
050684	101333	175			30	12
050684	101335	175			31	0
050684	101337	175			32	2
050684	101339	175			33	0
050684	101341	175			34	0
050684	101343	175			35	3
050684	101345	175			36	5
050684	101347	175			37	0
050684	101349	175			38	0
050684	101351	175			39	2
050684	101353	175			40	0
050684	101355	175			41	0
050684	101357	175			42	2
050684	101359	175			43	0
050684	101401	175			44	0
050684	101403	175	55424	12440	45	2

TOTAL LENGTH:5740M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
050684	101706	145	55422	12443	46	0
050684	101708	145			47	0
050684	101710	145			48	2
050684	101712	145			49	0
050684	101714	145			50	0
050684	101716	145			51	5
050684	101718	145			52	0
050684	101720	145			53	0
050684	101722	145			54	2
050684	101724	145			55	0
050684	101726	145			56	0
050684	101728	145			57	2
050684	101730	145			58	0
050684	101732	145			59	0
050684	101734	145			60	5
050684	101736	145			61	0
050684	101738	145			62	0
050684	101740	145			63	2
050684	101742	145			64	5
050684	101744	145			65	23
050684	101746	145			66	43
050684	101748	145			67	79
050684	101750	145			68	65
050684	101752	145			69	13
050684	101754	145			70	32
050684	101756	145			71	38
050684	101758	145			72	41
050684	101800	145			73	35
050684	101802	145			74	36
050684	101804	145			75	8
050684	101806	145			76	3
050684	101808	145			77	0
050684	101810	145			78	0
050684	101812	145			79	5
050684	101814	145			80	0
050684	101816	145			81	0
050684	101818	145			82	2
050684	101820	145			83	0
050684	101822	145			84	0
050684	101824	145			85	5
050684	101826	145			86	0
050684	101828	145			87	0
050684	101830	145			88	2
050684	101832	145			89	2
050684	101834	145	55450	12440	90	0

5. 6.84

TOTAL LENGTH:5450M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
050684	104124	92	55454	12440	1	0
050684	104126	92			2	0
050684	104128	92			3	0
050684	104130	92			4	3
050684	104132	92			5	0
050684	104134	92			6	0
050684	104136	92			7	3
050684	104138	92			8	0
050684	104140	92			9	0
050684	104142	92			10	4
050684	104144	92			11	0
050684	104146	92			12	0
050684	104148	92			13	4
050684	104150	92			14	0
050684	104152	92			15	0
050684	104154	92			16	4
050684	104156	92			17	0
050684	104158	92			18	0
050684	104200	92			19	3
050684	104202	92			20	4
050684	104204	92			21	58
050684	104206	92			22	507
050684	104208	92			23	193
050684	104210	92			24	305
050684	104212	92			25	216
050684	104214	92			26	296
050684	104216	92			27	350
050684	104218	92			28	194
050684	104220	92			29	200
050684	104222	92			30	75
050684	104224	92			31	80
050684	104226	92			32	21
050684	104228	92			33	11
050684	104230	92			34	0
050684	104232	92			35	0
050684	104234	92			36	2
050684	104236	92			37	0
050684	104238	92			38	0
050684	104240	92			39	3
050684	104242	92			40	0
050684	104244	92			41	0
050684	104246	92			42	3
050684	104248	92			43	0
050684	104250	92			44	0
050684	104252	92	55423	12443	45	4

TOTAL LENGTH:5330M.

	CET					
050684	104558	38	554230	12440	46	0
050684	104600	38			47	0
050684	104602	38			48	1
050684	104604	38			49	0
050684	104606	38			50	0
050684	104608	38			51	1
050684	104610	38			52	1
050684	104612	38			53	4
050684	104614	38			54	8
050684	104616	38			55	139
050684	104618	38			56	222
050684	104620	38			57	96
050684	104622	38			58	10
050684	104624	38			59	8
050684	104626	38			60	27
050684	104628	38			61	27
050684	104630	38			62	162
050684	104632	38			63	64
050684	104634	38			64	457
050684	104636	38			65	399
050684	104638	38			66	504
050684	104640	38			67	262
050684	104642	38			68	526
050684	104644	38			69	733
050684	104646	38			70	563
050684	104648	38			71	724
050684	104650	38			72	784
050684	104652	38			73	504
050684	104654	38			74	210
050684	104656	38			75	46
050684	104658	38			76	5
050684	104700	38			77	5
050684	104702	38			78	0
050684	104704	38			79	0
050684	104706	38			80	1
050684	104708	38			81	5
050684	104710	38			82	0
050684	104712	38			83	0
050684	104714	38			84	130
050684	104716	38			85	0
050684	104718	38			86	0
050684	104720	38			87	0
050684	104722	38			88	0
050684	104724	38			89	0
050684	104726	38	55454	12443	90	0

12. 6.84

TOTAL LENGTH:5610M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
120684	103835	185	555070	12435	1	2
120684	103837	185			2	2
120684	103839	185			3	2
120684	103841	185			4	2
120684	103843	185			5	2
120684	103845	185			6	2
120684	103847	185			7	2
120684	103849	185			8	2
120684	103851	185			9	2
120684	103853	185			10	2
120684	103855	185			11	2
120684	103857	185			12	2
120684	103859	185			13	2
120684	103901	185			14	2
120684	103903	185			15	2
120684	103905	185			16	2
120684	103907	185			17	2
120684	103909	185			18	2
120684	103911	185			19	2
120684	103913	185			20	6
120684	103915	185			21	2
120684	103917	185			22	2
120684	103919	185			23	2
120684	103921	185			24	2
120684	103923	185			25	2
120684	103925	185			26	6
120684	103927	185			27	11
120684	103929	185			28	8
120684	103931	185			29	5
120684	103933	185			30	7
120684	103935	185			31	6
120684	103937	185			32	5
120684	103939	185			33	6
120684	103941	185			34	5
120684	103943	185			35	6
120684	103945	185			36	6
120684	103947	185			37	6
120684	103949	185			38	17
120684	103951	185			39	17
120684	103953	185			40	16
120684	103955	185			41	18
120684	103957	185			42	20
120684	103959	185			43	16
120684	104001	185			44	20
120684	104003	185	55475	12438	45	11

TOTAL LENGTH:5600M.

	CET					
120684	104840	135	55475	12438	46	24
120684	104842	135			47	30
120684	104844	135			48	30
120684	104846	135			49	28
120684	104848	135			50	34
120684	104850	135			51	25
120684	104852	135			52	42
120684	104854	135			53	15
120684	104856	135			54	48
120684	104858	135			55	40
120684	104900	135			56	11
120684	104902	135			57	13
120684	104904	135			58	11
120684	104906	135			59	7
120684	104908	135			60	7
120684	104910	135			61	5
120684	104912	135			62	5
120684	104914	135			63	4
120684	104916	135			64	7
120684	104918	135			65	18
120684	104920	135			66	15
120684	104922	135			67	5
120684	104924	135			68	10
120684	104926	135			69	2
120684	104928	135			70	2
120684	104930	135			71	2
120684	104932	135			72	2
120684	104934	135			73	2
120684	104936	135			74	2
120684	104938	135			75	2
120684	104940	135			76	2
120684	104942	135			77	2
120684	104944	135			78	2
120684	104946	135			79	2
120684	104948	135			80	2
120684	104950	135			81	2
120684	104952	135			82	2
120684	104954	135			83	2
120684	104956	135			84	2
120684	104958	135			85	2
120684	105000	135			86	2
120684	105002	135			87	2
120684	105004	135			88	2
120684	105006	135			89	2
120684	105008	135	555100	12435	90	2

12. 6.84

TOTAL LENGTH:6015M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
120684	110931	105	555035	12430	1	1
120684	110933	105			2	1
120684	110935	105			3	1
120684	110937	105			4	3
120684	110939	105			5	3
120684	110941	105			6	2
120684	110943	105			7	2
120684	110945	105			8	2
120684	110947	105			9	5
120684	110949	105			10	5
120684	110951	105			11	2
120684	110953	105			12	2
120684	110955	105			13	2
120684	110957	105			14	2
120684	110959	105			15	2
120684	111001	105			16	5
120684	111003	105			17	5
120684	111005	105			18	5
120684	111007	105			19	2
120684	111009	105			20	2
120684	111011	105			21	2
120684	111013	105			22	3
120684	111015	105			23	3
120684	111017	105			24	4
120684	111019	105			25	4
120684	111021	105			26	4
120684	111023	105			27	2
120684	111025	105			28	2
120684	111027	105			29	2
120684	111029	105			30	2
120684	111031	105			31	2
120684	111033	105			32	2
120684	111035	105			33	4
120684	111037	105			34	4
120684	111039	105			35	2
120684	111041	105			36	3
120684	111043	105			37	5
120684	111045	105			38	3
120684	111047	105			39	5
120684	111049	105			40	7
120684	111051	105			41	7
120684	111053	105			42	7
120684	111055	105			43	3
120684	111057	105			44	2
120684	111059	105	55475	12433	45	3

TOTAL LENGTH:5720M.

	CET					
120684	111853	75	554445	12443	46	7
120684	111855	75			47	9
120684	111857	75			48	15
120684	111859	75			49	16
120684	111901	75			50	18
120684	111903	75			51	18
120684	111905	75			52	12
120684	111907	75			53	12
120684	111909	75			54	12
120684	111911	75			55	8
120684	111913	75			56	5
120684	111915	75			57	12
120684	111917	75			58	10
120684	111919	75			59	7
120684	111921	75			60	7
120684	111923	75			61	6
120684	111925	75			62	8
120684	111927	75			63	3
120684	111929	75			64	4
120684	111931	75			65	4
120684	111933	75			66	3
120684	111935	75			67	3
120684	111937	75			68	2
120684	111939	75			69	2
120684	111941	75			70	2
120684	111943	75			71	2
120684	111945	75			72	2
120684	111947	75			73	2
120684	111949	75			74	5
120684	111951	75			75	2
120684	111953	75			76	2
120684	111955	75			77	2
120684	111957	75			78	2
120684	111959	75			79	2
120684	112001	75			80	2
120684	112003	75			81	6
120684	112005	75			82	2
120684	112007	75			83	2
120684	112009	75			84	2
120684	112011	75			85	2
120684	112013	75			86	2
120684	112015	75			87	2
120684	112017	75			88	2
120684	112019	75			89	2
120684	112021	75	554755	12440	90	2

12. 6.84

TOTAL LENGTH:11807M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
120684	113655	30	55513	12430	1	2
120684	113657	30			2	2
120684	113659	30			3	2
120684	113701	30			4	2
120684	113703	30			5	2
120684	113705	30			6	1
120684	113707	30			7	1
120684	113709	30			8	1
120684	113711	30			9	2
120684	113713	30			10	2
120684	113715	30			11	2
120684	113717	30			12	2
120684	113719	30			13	2
120684	113721	30			14	2
120684	113723	30			15	2
120684	113725	30			16	2
120684	113727	30			17	2
120684	113729	30			18	2
120684	113731	30			19	2
120684	113733	30			20	2
120684	113735	30			21	2
120684	113737	30			22	2
120684	113739	30			23	2
120684	113741	30			24	2
120684	113743	30			25	2
120684	113745	30			26	2
120684	113747	30			27	2
120684	113749	30			28	2
120684	113751	30			29	2
120684	113753	30			30	2
120684	113755	30			31	2
120684	113757	30			32	2
120684	113759	30			33	3
120684	113801	30			34	3
120684	113803	30			35	3
120684	113805	30			36	3
120684	113807	30			37	3
120684	113809	30			38	3
120684	113811	30			39	2
120684	113813	30			40	2
120684	113815	30			41	2
120684	113817	30			42	2
120684	113819	30			43	2
120684	113821	30			44	2
120684	113823	30			45	2

TOTAL LENGTH:11807M.

DATE	TIME CET	HEIGHT	POSITION N	POSITION E	SYRINGE	CONC. PPT
120684	113825	30			46	2
120684	113827	30			47	2
120684	113829	30			48	2
120684	113831	30			49	2
120684	113833	30			50	2
120684	113835	30			51	2
120684	113837	30			52	2
120684	113839	30			53	3
120684	113841	30			54	11
120684	113843	30			55	5
120684	113845	30			56	5
120684	113847	30			57	8
120684	113849	30			58	4
120684	113851	30			59	6
120684	113853	30			60	44
120684	113855	30			61	44
120684	113857	30			62	27
120684	113859	30			63	23
120684	113901	30			64	22
120684	113903	30			65	25
120684	113905	30			66	12
120684	113907	30			67	12
120684	113909	30			68	5
120684	113911	30			69	4
120684	113913	30			70	3
120684	113915	30			71	12
120684	113917	30			72	3
120684	113919	30			73	10
120684	113921	30			74	10
120684	113923	30			75	9
120684	113925	30			76	14
120684	113927	30			77	25
120684	113929	30			78	22
120684	113931	30			79	6
120684	113933	30			80	8
120684	113935	30			81	8
120684	113937	30			82	7
120684	113939	30			83	5
120684	113941	30			84	5
120684	113943	30			85	11
120684	113945	30			86	15
120684	113947	30			87	21
120684	113949	30			88	87
120684	113951	30			89	94
120684	113953	30	554485	12446	90	35

DATE	TIME CET	EVENT	LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	0E-29-WE1												
290584	113759	1 113748	N 55.695	-E 12.015	2.3	118	11.57	-35	16.27	10.11	.0	.449E-04	0
290584	113829		N 55.693	-E 12.040	2.1	115	12.19	18	16.21	9.70	.0	.418E-04	0
290584	113859		N 55.693	-E 12.103	2.2	118	11.74	-2	16.34	9.91	.0	.429E-04	0
290584	113929		N 55.695	-E 12.123	2.3	118	11.88	-2	16.34	10.00	.0	.427E-04	0
290584	113959		N 55.695	-E 12.150	2.6	120	12.11	10	16.46	9.59	.0	.404E-04	0
290584	114029		N 55.698	-E 12.175	3.0	121	12.21	8	16.56	9.59	.0	.390E-04	0
290584	114059		N 55.698	-E 12.203	3.1	121	12.13	-2	16.62	9.81	.0	.387E-04	0
290584	114129		N 55.702	-E 12.223	3.2	122	11.97	-12	16.81	9.74	.0	.415E-04	0
290584	114159		N 55.703	-E 12.247	3.2	121	12.32	18	16.70	9.85	.0	.395E-04	0
290584	114229		N 55.707	-E 12.265	3.6	123	12.13	0	16.86	9.93	.0	.401E-04	0
290584	114259		N 55.708	-E 12.290	3.7	125	12.59	16	16.86	9.75	.0	.385E-04	0
290584	114329		N 55.712	-E 12.337	3.3	125	12.30	-22	16.85	9.63	.0	.383E-04	0
290584	114359		N 55.715	-E 12.360	2.4	119	12.32	-2	16.69	9.65	.0	.383E-04	0
290584	114429		N 55.718	-E 12.395	2.7	116	11.86	-20	16.69	9.66	.0	.374E-04	0
290584	114459		N 55.715	-E 12.427	2.4	114	11.84	-8	16.65	9.70	.0	.371E-04	0
290584	114529		N 55.720	-E 12.415	1.7	114	11.74	-4	16.72	9.48	.0	.373E-04	0
290584	114559		N 55.722	-E 12.442	1.6	112	11.68	8	16.82	9.45	.0	.377E-04	0
290584	114629		N 55.728	-E 12.465	1.1	112	11.72	0	16.92	9.34	.0	.379E-04	0
290584	114659		N 55.732	-E 12.487	1.3	112	11.76	2	16.95	9.46	.0	.385E-04	0
290584	114729		N 55.737	-E 12.503	1.5	113	12.03	22	16.96	9.49	.0	.394E-04	0
290584	114759	2 114742	N 55.740	-E 12.543	1.4	115	12.44	-43	16.99	9.40	.0	.400E-04	0
290584	114829		N 55.742	-E 12.560	1.5	113	11.92	-84	17.00	9.29	.0	.402E-04	0
290584	114859		N 55.747	-E 12.583	1.7	113	11.76	-2	16.99	9.36	.0	.396E-04	0
290584	114929		N 55.750	-E 12.603	1.6	113	11.86	2	17.01	9.38	.0	.387E-04	0
290584	114959		N 55.755	-E 12.630	1.8	113	11.68	-12	17.16	9.28	.0	.391E-04	0
290584	115029		N 55.757	-E 12.667	2.0	112	11.95	31	17.22	9.25	.0	.371E-04	0
290584	115059		N 55.762	-E 12.683	1.7	114	11.70	-12	17.30	9.01	.0	.355E-04	0
290584	115129		N 55.763	-E 12.710	2.0	112	11.74	10	17.30	9.16	.0	.344E-04	0
290584	115159		N 55.767	-E 12.763	2.3	111	11.68	-4	17.27	9.55	.0	.367E-04	0
290584	115229		N 55.770	-E 12.785	2.3	113	11.76	18	17.17	9.24	.0	.374E-04	0
290584	115259		N 55.773	-E 12.803	2.5	113	11.92	4	17.10	9.74	.0	.374E-04	0
290584	115329		N 55.777	-E 12.842	3.0	115	11.78	-12	17.18	9.66	.0	.412E-04	0
290584	115359		N 55.780	-E 12.855	2.5	112	11.51	-26	17.23	9.09	.0	.381E-04	0
290584	115429		N 55.782	-E 12.883	3.3	108	11.66	10	17.15	9.85	.0	.399E-04	0
290584	115459	3 115458	N 55.785	-E 12.900	3.6	113	11.70	0	17.15	9.94	.0	.441E-04	0
290584	115529		N 55.787	-E 12.918	3.3	115	11.95	6	17.11	9.68	.0	.447E-04	0
290584	115559		N 55.788	-E 12.958	2.6	112	11.68	20	17.10	9.51	.0	.453E-04	0
290584	115629		N 55.793	-E 12.960	2.3	111	11.53	-14	17.06	9.52	.0	.466E-04	0
290584	115659		N 55.797	-E 12.980	3.7	109	11.51	22	17.11	9.77	.0	.463E-04	0
290584	115729		N 55.795	-E 13.017	3.1	112	11.70	-14	17.09	9.56	.0	.472E-04	0
290584	115759		N 55.797	-E 13.048	3.8	115	12.17	24	17.10	9.73	.0	.476E-04	0
290584	115829	4 115824	N 55.798	-E 13.038	3.0	118	11.84	-35	17.06	9.60	.0	.495E-04	0

DATE	TIME	EVENT		LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1													
	02-04-WE1													
040684	124501	19	124432	N 55.700-E	12.042	3.9	102	10.19	12	18.92	13.18	.0	.543E-04	0
040684	124601			N 55.708-E	12.062	3.5	104	10.07	12	18.96	13.13	.0	.516E-04	0
040684	124701	20	124658	N 55.710-E	12.116	3.3	106	10.21	-37	18.89	13.96	.0	.496E-04	0
040684	124801			N 55.713-E	12.145	3.4	108	9.90	-4	18.99	16.31	.0	.473E-04	0
040684	124901			N 55.718-E	12.175	3.6	107	10.03	43	18.84	12.83	.0	.453E-04	0
040684	124911			N 55.720-E	12.188	3.3	107	9.95	-20	18.83	12.69	.0	.427E-04	0
040684	124921			N 55.717-E	12.197	4.0	108	9.62	4	18.96	12.93	.0	.436E-04	0
040684	124931			N 55.718-E	12.200	4.2	109	9.70	6	18.98	12.80	.0	.431E-04	0
040684	124941			N 55.717-E	12.210	4.2	110	9.45	-16	19.08	12.82	.0	.433E-04	0
040684	124951			N 55.715-E	12.212	3.5	109	9.41	12	19.09	12.70	.0	.411E-04	0
040684	125001			N 55.722-E	12.182	3.4	105	9.78	16	18.95	12.79	.0	.405E-04	0
040684	125011			N 55.723-E	12.187	3.7	105	9.80	-2	18.84	12.70	.0	.427E-04	0
040684	125021			N 55.722-E	12.198	4.6	103	9.37	-18	18.83	12.83	.0	.418E-04	0
090684	125031			N 55.723-E	12.202	4.8	101	9.55	22	18.89	13.04	.0	.441E-04	0
040684	125041			N 55.723-E	12.208	4.6	101	9.82	24	18.81	13.13	.0	.436E-04	0
040684	125051			N 55.723-E	12.217	4.3	107	10.11	34	18.72	12.74	.0	.443E-04	0
040684	125101			N 55.723-E	12.210	4.4	104	10.36	6	18.56	12.74	.0	.425E-04	0
040684	125111			N 55.722-E	12.237	4.3	103	10.17	-10	18.52	12.66	.0	.441E-04	0
040684	125121			N 55.722-E	12.263	3.5	105	10.05	-12	18.52	12.80	.0	.442E-04	0
040684	125131			N 55.723-E	12.262	3.3	104	9.97	10	18.49	12.89	.0	.457E-04	0
040684	125141			N 55.723-E	12.270	4.6	105	10.11	12	18.49	12.85	.0	.454E-04	0
040684	125151			N 55.723-E	12.277	4.0	106	10.03	2	18.46	12.78	.0	.461E-04	0
040684	125201			N 55.723-E	12.282	4.6	108	10.09	6	18.54	12.65	.0	.443E-04	0
040684	125211			N 55.725-E	12.290	3.4	111	10.40	10	18.56	12.64	.0	.435E-04	0
040684	125221			N 55.725-E	12.295	4.7	110	10.62	2	18.51	12.69	.0	.424E-04	0
040684	125231			N 55.722-E	12.313	4.2	111	10.95	22	18.42	12.71	.0	.433E-04	0
040684	125241			N 55.722-E	12.318	4.2	114	10.81	-16	18.47	12.68	.0	.412E-04	0
040684	125251			N 55.723-E	12.332	3.8	114	10.07	-34	18.68	12.68	.0	.394E-04	0
040684	125301			N 55.725-E	12.338	4.5	114	9.41	-16	18.81	12.91	.0	.391E-04	0
040684	125311			N 55.725-E	12.343	4.5	115	9.76	34	18.78	12.76	.0	.388E-04	0
040684	125321			N 55.725-E	12.348	2.4	115	10.17	4	18.73	12.53	.0	.385E-04	0
040684	125331			N 55.722-E	12.352	2.0	115	10.23	-6	18.67	12.55	.0	.371E-04	0
040684	125341	21	125341	N 55.723-E	12.368	1.4	114	9.97	-10	18.74	12.61	.0	.360E-04	0
040684	125351			N 55.725-E	12.373	1.5	114	9.92	-14	18.63	12.61	.0	.369E-04	0
040684	125401			N 55.727-E	12.377	1.9	113	9.74	8	18.59	12.68	.0	.356E-04	0
040684	125411			N 55.727-E	12.382	1.7	112	9.55	-10	18.59	12.85	.0	.372E-04	0
040684	125421			N 55.727-E	12.387	2.8	112	9.33	-8	18.52	13.12	.0	.379E-04	0
040684	125431			N 55.725-E	12.392	1.5	110	9.35	2	18.59	13.15	.0	.397E-04	0
040684	125441			N 55.728-E	12.403	1.2	110	9.29	-10	18.58	13.32	.0	.408E-04	0
040684	125451			N 55.730-E	12.410	1.8	110	9.43	12	18.51	13.41	.0	.432E-04	0
040684	125501			N 55.732-E	12.415	2.2	110	9.51	6	18.45	13.45	.0	.437E-04	0
040684	125511			N 55.733-E	12.423	1.9	109	9.58	10	18.34	13.46	.0	.454E-04	0
040684	125521			N 55.735-E	12.427	1.6	109	9.72	16	18.34	13.45	.0	.473E-04	0
040684	125531			N 55.735-E	12.430	1.8	109	10.01	16	18.50	13.34	.0	.463E-04	0
040684	125541			N 55.735-E	12.482	2.1	111	9.97	-20	18.39	13.43	.0	.457E-04	0
040684	125551	22	125543	N 55.737-E	12.493	1.8	114	9.51	-18	18.55	13.45	.0	.443E-04	0
040684	125601			N 55.737-E	12.523	1.9	113	9.62	16	18.59	13.48	.0	.453E-04	0
040684	125611			N 55.740-E	12.528	2.1	110	10.13	43	18.50	13.35	.0	.436E-04	0
040684	125621			N 55.740-E	12.535	2.1	107	10.73	18	18.28	13.32	.0	.448E-04	0
040684	125631			N 55.738-E	12.540	1.6	108	10.93	-8	18.22	13.02	.0	.434E-04	0
040684	125641			N 55.738-E	12.543	1.8	114	10.32	-43	18.42	13.04	.0	.420E-04	0
040684	125651			N 55.742-E	12.552	2.4	117	9.45	-28	18.73	13.10	.0	.396E-04	0
040684	125701			N 55.743-E	12.560	2.7	116	9.41	12	18.76	13.21	.0	.399E-04	0
040684	125711			N 55.745-E	12.565	2.7	113	9.70	14	18.72	13.13	.0	.396E-04	0
040684	125721			N 55.745-E	12.585	2.7	111	9.84	-2	18.62	13.17	.0	.396E-04	0
040684	125731			N 55.745-E	12.578	3.0	110	9.99	10	18.60	12.96	.0	.392E-04	0
040684	125741			N 55.745-E	12.583	3.0	108	10.11	-4	18.47	13.01	.0	.390E-04	0
040684	125751			N 55.745-E	12.592	2.3	107	10.44	32	18.44	12.81	.0	.388E-04	0
040684	125801			N 55.745-E	12.598	2.0	107	10.62	-16	18.31	12.85	.0	.371E-04	0
040684	125811			N 55.748-E	12.603	2.3	110	10.29	6	18.49	12.77	.0	.372E-04	0
040684	125821			N 55.748-E	12.613	2.2	112	10.09	-26	18.46	13.05	.0	.362E-04	0
040684	125831			N 55.750-E	12.618	2.1	116	9.58	-12	18.64	12.94	.0	.369E-04	0
040684	125841			N 55.752-E	12.625	2.1	115	9.43	8	18.72	12.88	.0	.375E-04	0
040684	125851			N 55.752-E	12.633	2.6	113	9.78	10	18.53	13.09	.0	.358E-04	0
040684	125901			N 55.752-E	12.647	2.5	110	10.17	10	18.42	13.10	.0	.384E-04	0
040684	125911			N 55.753-E	12.648	3.1	110	9.92	-4	18.49	12.90	.0	.384E-04	0

DATE	TIME	EVENT		LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1													
040684	125921			N 55.753	E 12.653	2.8	110	10.01	22	18.36	13.07	.0	.374E-04	0
040684	125931			N 55.755	E 12.660	3.0	107	10.52	12	18.13	12.95	.0	.388E-04	0
040684	125941			N 55.757	E 12.672	2.5	107	10.32	-10	18.08	13.07	.0	.384E-04	0
040684	125951			N 55.757	E 12.682	2.6	111	10.11	-8	18.11	13.14	.0	.408E-04	0
040684	130001			N 55.757	E 12.693	2.9	113	9.82	-16	18.23	13.09	.0	.397E-04	0
040684	130011			N 55.757	E 12.695	2.8	115	9.47	-6	18.38	13.02	.0	.397E-04	0
040684	130021			N 55.757	E 12.698	2.5	116	9.41	2	18.51	13.02	.0	.384E-04	0
040684	130031			N 55.757	E 12.703	2.6	114	9.25	0	18.66	12.79	.0	.371E-04	0
040684	130041			N 55.757	E 12.713	2.8	115	9.29	-4	18.54	13.06	.0	.359E-04	0
040684	130051			N 55.755	E 12.715	3.5	112	9.70	30	18.43	12.93	.0	.364E-04	0
040684	130101			N 55.755	E 12.725	3.3	109	10.21	10	18.18	12.80	.0	.372E-04	0
040684	130111			N 55.755	E 12.728	3.3	107	10.50	4	17.94	12.82	.0	.371E-04	0
040684	130121			N 55.755	E 12.728	3.4	108	10.40	2	17.97	12.84	.0	.372E-04	0
040684	130131			N 55.755	E 12.743	3.3	109	10.29	0	18.04	13.04	.0	.369E-04	0
040684	130141			N 55.755	E 12.747	3.4	110	9.80	-12	18.11	12.81	.0	.369E-04	0
040684	130151			N 55.753	E 12.747	3.1	113	9.53	-4	18.16	12.95	.0	.365E-04	0
040684	130201			N 55.753	E 12.752	3.6	114	9.39	-2	18.25	12.80	.0	.378E-04	0
040684	130211			N 55.753	E 12.752	3.5	114	9.19	0	18.34	12.62	.0	.360E-04	0
040684	130221			N 55.752	E 12.763	4.4	109	9.29	6	18.29	12.70	.0	.344E-04	0
040684	130231			N 55.752	E 12.767	4.3	107	9.74	53	18.15	12.97	.0	.345E-04	0
040684	130241	23	130239	N 55.748	E 12.785	4.0	106	10.19	-22	17.92	12.88	.0	.361E-04	0
040684	130251			N 55.750	E 12.792	3.8	110	9.35	-39	18.03	12.82	.0	.364E-04	0
040684	130301			N 55.750	E 12.795	4.4	106	9.21	16	18.16	12.98	.0	.358E-04	0
040684	130311	24	130306	N 55.750	E 12.802	5.6	104	9.53	16	16.11	13.12	.0	.373E-04	0
040684	130321			N 55.750	E 12.805	4.0	107	9.95	18	17.92	12.96	.0	.381E-04	0
040684	130331			N 55.750	E 12.808	4.0	106	10.19	14	17.76	12.89	.0	.383E-04	0
040684	130341			N 55.750	E 12.822	3.7	105	10.05	-6	17.70	12.91	.0	.380E-04	0
040684	130351			N 55.748	E 12.828	3.4	105	9.95	-12	17.63	12.99	.0	.384E-04	0
040684	130401			N 55.747	E 12.813	2.8	107	9.76	-8	17.67	13.08	.0	.390E-04	0
040684	130411			N 55.748	E 12.815	3.1	108	9.78	10	17.72	13.05	.0	.402E-04	0
040684	130421			N 55.748	E 12.820	2.9	110	9.66	-39	17.90	12.96	.0	.405E-04	0
040684	130431			N 55.748	E 12.827	3.8	111	9.51	-34	17.93	13.20	.0	.393E-04	0
040684	130441			N 55.747	E 12.837	3.1	110	9.66	12	17.84	12.94	.0	.393E-04	0
040684	130451			N 55.747	E 12.847	3.5	108	9.53	10	17.81	12.71	.0	.381E-04	0
040684	130501			N 55.750	E 12.850	3.4	107	9.72	8	17.67	12.98	.0	.386E-04	0
040684	130511			N 55.752	E 12.858	3.0	107	9.78	2	17.59	12.79	.0	.382E-04	0
040684	130521			N 55.753	E 12.903	3.2	104	9.72	8	17.55	13.12	.0	.402E-04	0
040684	130531			N 55.753	E 12.935	3.7	105	9.86	-4	17.48	13.18	.0	.400E-04	0
040684	130541			N 55.753	E 12.938	3.6	106	9.84	-2	17.51	12.98	.0	.413E-04	0
040684	130551			N 55.755	E 12.972	3.9	107	10.15	22	17.46	13.19	.0	.410E-04	0
040684	130601			N 55.758	E 12.982	3.0	109	10.11	-6	17.48	12.73	.0	.403E-04	0
040684	130611			N 55.758	E 12.982	3.4	106	9.72	-28	17.49	12.80	.0	.392E-04	0
040684	130621			N 55.758	E 12.987	3.8	108	9.82	16	17.34	13.15	.0	.401E-04	0
040684	130631			N 55.758	E 12.993	3.2	108	10.21	16	17.15	13.09	.0	.426E-04	0
040684	130641	25	130640	N 55.758	E 12.997	3.3	107	10.23	-2	17.03	12.96	.0	.433E-04	0
040684	130651			N 55.762	E 13.032	3.0	109	9.78	-16	17.18	12.94	.0	.433E-04	0
040684	130701			N 55.763	E 13.035	3.1	109	9.90	24	17.20	12.87	.0	.433E-04	0
040684	130711			N 55.763	E 13.025	2.8	106	10.21	4	16.99	12.85	.0	.411E-04	0
090684	130721			N 55.765	E 13.023	3.2	104	10.29	2	16.95	12.91	.0	.425E-04	0
040684	130731			N 55.765	E 13.033	3.2	105	10.09	-20	16.88	13.03	.0	.424E-04	0
040684	130741	26	130733	N 55.767	E 13.038	3.7	109	9.95	8	17.05	13.26	.0	.436E-04	0
040684	130751			N 55.763	E 13.043	4.0	112	9.62	-32	17.09	13.20	.0	.441E-04	0
040684	130801			N 55.768	E 13.016	3.2	112	9.49	12	17.01	12.99	.0	.433E-04	0
040684	131029			N 55.788	E 13.167	3.5	110	9.92	-12	16.42	13.05	.0	.446E-04	0
040684	131059	1	131036	N 55.778	E 13.188	3.4	115	9.04	-38	16.76	12.96	.0	.429E-04	0

DATE	TIME	EVENT	LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1												
	0E-04-EW2												
040684	131059	1 131036	N 55.778-E	13.188	3.4	115	9.04	-38	16.76	12.96	.0	.429E-04	0
040684	131129		N 55.767-E	13.155	3.9	111	9.14	-14	16.94	13.17	.0	.433E-04	0
040684	131159	2 131152	N 55.762-E	13.128	4.4	130	6.94	-26	18.28	13.67	.0	.417E-04	0
040684	131229		N 55.758-E	13.103	3.7	119	7.12	-6	18.10	13.35	.0	.410E-04	0
040684	131259	3 131245	N 55.760-E	12.995	3.7	119	7.10	-8	18.02	13.60	.0	.415E-04	0
040684	131329		N 55.755-E	12.967	3.9	115	7.38	24	18.00	13.58	.0	.437E-04	0
040684	131351		N 55.755-E	12.972	3.9	115	7.81	20	18.05	13.65	.0	.436E-04	0
040684	131401		N 55.753-E	12.968	3.5	120	7.12	-22	18.23	13.51	.0	.428E-04	0
040684	131411		N 55.753-E	12.962	3.1	121	6.41	-20	18.52	13.48	.0	.420E-04	0
040684	131421		N 55.752-E	12.953	2.9	120	6.26	-2	18.58	13.48	.0	.411E-04	0
040684	131431		N 55.752-E	12.945	3.1	119	6.16	0	18.54	13.40	.0	.406E-04	0
040684	131441		N 55.750-E	12.933	3.7	117	6.53	24	18.60	13.38	.0	.401E-04	0
040684	131451		N 55.748-E	12.922	3.9	116	7.04	26	18.61	13.56	.0	.404E-04	0
040684	131501		N 55.747-E	12.913	3.8	115	7.22	20	18.56	13.40	.0	.405E-04	0
040684	131511	4 131508	N 55.748-E	12.907	4.0	115	7.73	22	18.54	13.46	.0	.391E-04	0
040684	131521		N 55.745-E	12.895	3.6	117	7.98	24	18.53	13.41	.0	.380E-04	0
040684	131531		N 55.745-E	12.882	3.9	120	7.71	-12	18.61	13.43	.0	.381E-04	0
040684	131541	5 131533	N 55.743-E	12.862	3.3	124	6.81	-34	18.78	13.62	.0	.397E-04	0
040684	131551		N 55.742-E	12.857	3.1	121	6.20	-26	18.94	13.54	.0	.388E-04	0
040684	131601		N 55.740-E	12.843	3.2	119	5.90	-6	19.06	13.20	.0	.391E-04	0
040684	131611		N 55.740-E	12.837	3.4	116	6.41	44	18.96	13.15	.0	.367E-04	0
040684	131621		N 55.740-E	12.830	3.8	110	7.06	30	18.67	13.03	.0	.349E-04	0
040684	131631		N 55.738-E	12.823	3.5	108	7.49	28	18.45	12.92	.0	.348E-04	0
040684	131641		N 55.737-E	12.815	3.2	109	6.92	-38	18.57	12.78	.0	.351E-04	0
040684	131651		N 55.735-E	12.805	2.9	116	6.35	-18	18.78	12.93	.0	.335E-04	0
040684	131701		N 55.733-E	12.795	2.2	116	6.12	-10	18.85	13.07	.0	.328E-04	0
040684	131711		N 55.732-E	12.783	2.3	113	6.08	4	18.93	12.90	.0	.335E-04	0
040684	131721		N 55.730-E	12.760	2.5	110	6.43	-6	18.81	12.89	.0	.325E-04	0
040684	131731		N 55.730-E	12.723	2.0	111	6.22	2	18.84	12.84	.0	.334E-04	0
040684	131741		N 55.728-E	12.717	2.0	108	6.73	38	18.76	12.92	.0	.336E-04	0
040684	131751		N 55.727-E	12.703	2.0	104	7.34	14	18.49	12.88	.0	.335E-04	0
040684	131801		N 55.725-E	12.688	2.2	105	7.55	6	18.42	12.92	.0	.346E-04	0
040684	131811		N 55.725-E	12.662	2.1	108	7.20	-6	18.59	12.75	.0	.353E-04	0
040684	131821		N 55.725-E	12.653	2.4	106	7.10	0	18.72	12.72	.0	.331E-04	0
040684	131831		N 55.725-E	12.645	1.7	107	7.04	2	18.77	12.77	.0	.329E-04	0
040684	131841		N 55.723-E	12.633	2.4	108	7.06	4	18.83	12.65	.0	.320E-04	0
040684	131851		N 55.725-E	12.618	1.9	108	7.26	16	18.72	12.71	.0	.325E-04	0
040684	131901	6 131858	N 55.723-E	12.612	1.9	112	6.73	-22	18.85	12.79	.0	.315E-04	0
040684	131911		N 55.722-E	12.602	2.1	112	6.67	8	18.85	12.85	.0	.321E-04	0
040684	131921		N 55.720-E	12.590	1.5	114	6.53	-10	18.90	12.99	.0	.318E-04	0
040684	131931		N 55.722-E	12.623	1.5	113	6.45	0	18.93	13.00	.0	.333E-04	0
040684	131941	7 131938	N 55.720-E	12.617	1.5	115	6.18	-18	19.03	12.90	.0	.335E-04	0
	0E-04-VERT1												
040684	133101	13 133059	N 55.725-E	12.652	1.8	112	3.13	0	19.25	13.05	.0	.335E-04	0
040684	133111		N 55.725-E	12.640	2.6	112	3.15	-2	19.26	13.04	.0	.329E-04	0
040684	133121		N 55.723-E	12.633	2.8	112	3.15	4	19.13	13.04	.0	.326E-04	0
040684	133131		N 55.722-E	12.622	2.2	112	3.31	14	19.13	13.10	.0	.321E-04	0
040684	133141	14 133134	N 55.722-E	12.615	2.0	106	3.75	28	19.04	13.08	.0	.331E-04	0
040684	133151		N 55.723-E	12.608	1.7	99	5.05	68	18.91	13.01	.0	.331E-04	0
040684	133201		N 55.727-E	12.597	1.4	102	5.70	22	18.85	12.90	.0	.341E-04	0
040684	133211		N 55.730-E	12.605	1.4	104	6.51	54	18.80	12.77	.0	.343E-04	0
040684	133221		N 55.735-E	12.605	1.5	101	7.88	63	18.52	12.66	.0	.332E-04	0
040684	133231		N 55.738-E	12.610	1.5	100	9.04	55	18.23	12.79	.0	.331E-04	0
040684	133241		N 55.742-E	12.610	1.7	101	9.66	26	18.03	12.73	.0	.334E-04	0
040684	133251		N 55.745-E	12.607	1.9	101	10.38	18	17.71	12.92	.0	.346E-04	0
040684	133351		N 55.775-E	12.548	2.1	96	13.92	308	16.79	12.40	.0	.359E-04	0
040684	133451		N 55.808-E	12.563	2.1	96	19.47	275	15.46	11.23	.0	.294E-04	0
040684	133551		N 55.847-E	12.542	1.8	99	24.35	303	15.03	9.45	.0	.170E-04	0
040684	133651		N 55.878-E	12.545	.8	103	29.76	260	14.90	7.79	.0	.130E-04	0
040684	133751	15 133700	N 55.912-E	12.505	.4	123	31.20	15	14.97	7.88	.0	.125E-04	0
040684	133851		N 55.948-E	12.533	.4	124	31.84	-57	14.51	8.02	.0	.134E-04	0

DATE	TIME	EVENT		LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1													
	0E-04-VERT2													
040684	140120			N 55,560-E	12.887	2.2	144	32.45	79	14.06	10.37	.0	.119E-04	0
040684	140150			N 55.563-E	12.910	2.7	150	30.15	-183	14.30	10.01	.0	.128E-04	0
040684	140220			N 55.563-E	12.998	2.9	169	25.45	-241	15.20	11.71	.0	.165E-04	0
040684	140250			N 55.575-E	13.067	3.4	167	21.64	-157	16.32	12.03	.0	.218E-04	0
040684	140320	22	140254	N 55.588-E	13.103	3.2	146	21.55	27	15.78	11.94	.0	.240E-04	0
040684	140350			N 55.592-E	13.130	3.6	141	20.87	-31	15.67	12.06	.0	.163E-04	0
040684	140420			N 55.603-E	13.162	3.1	137	21.13	40	15.14	12.07	.0	.242E-05	0
040684	140450			N 55.607-E	13.182	3.2	140	20.87	-21	15.15	12.18	.0	.121E-05	0
040684	140520			N 55.620-E	13.222	3.4	150	17.13	-119	16.05	12.40	.0	.117E-05	0
040684	140550			N 55.627-E	13.242	3.7	132	15.96	-25	15.89	12.43	.0	.120E-05	0
040684	140620			N 55.622-E	13.277	4.0	123	15.33	48	15.70	12.63	.0	.120E-05	0
040684	140650			N 55.605-E	13.280	3.6	117	13.71	-95	16.07	12.93	.0	.121E-05	0
040684	140720			N 55.587-E	13.290	4.1	106	10.89	-192	16.36	13.23	.0	.131E-05	0
040684	140750			N 55.567-E	13.273	4.1	98	7.69	-167	17.15	13.30	.0	.127E-05	0
040684	140820			N 55.555-E	13.273	5.6	94	5.01	-85	17.99	13.66	.0	.117E-05	0
040684	140850	23	140848	N 55.547-E	13.265	6.4	87	3.43	-48	18.88	14.36	.0	.119E-05	0
090684	140920			N 55.543-E	13.240	1.9	0	3.49	6	19.43	14.66	.0	.114E-05	0
040684	140950			N 55.558-E	13.233	9.7	76	3.33	0	19.58	14.76	.0	.118E-05	0
	0E-05-VERT1													
050684	115020			N 55.848-E	12.703	2.7	118	3.37	-6	20.06	12.62	.0	.127E-04	0
050684	115030			N 55.855-E	12.702	3.3	117	3.55	18	19.97	12.70	.0	.131E-04	0
050684	115040			N 55.860-E	12.698	3.0	115	3.79	-6	20.04	12.62	.0	.137E-04	0
050684	115050			N 55.863-E	12.697	3.6	116	3.61	-10	20.16	12.59	.0	.134E-04	0
050684	115100			N 55.873-E	12.697	3.5	115	4.08	32	20.13	12.70	.0	.128E-04	0
050684	115110			N 55.883-E	12.697	2.8	116	4.32	-2	20.08	12.54	.0	.130E-04	0
050684	115120			N 55.892-E	12.698	2.9	113	4.28	-10	20.11	12.52	.0	.127E-04	0
050684	115130	19	115122	N 55.897-E	12.698	3.7	109	4.60	38	19.79	12.91	.0	.127E-04	0
050684	115140			N 55.903-E	12.695	3.2	104	5.82	52	19.55	12.66	.0	.133E-04	0
050684	115150			N 55.908-E	12.697	3.1	101	6.16	8	19.36	12.55	.0	.140E-04	0
050684	115200			N 55.917-E	12.703	2.9	102	6.53	-73	19.24	12.55	.0	.139E-04	0
050684	115210			N 55.918-E	12.707	2.4	101	6.67	30	19.15	12.38	.0	.136E-04	0
050684	115220			N 55.925-E	12.707	3.4	98	7.08	10	19.00	12.41	.0	.144E-04	0
050684	115230			N 55.932-E	12.703	3.1	95	7.41	12	18.91	11.81	.0	.137E-04	0
050684	115240			N 55.933-E	12.700	3.0	96	7.94	26	18.78	12.38	.0	.134E-04	0
050684	115250			N 55.935-E	12.693	3.1	94	8.78	-18	18.63	12.52	.0	.137E-04	0
050684	115300			N 55.935-E	12.682	3.6	96	9.12	4	18.43	12.54	.0	.146E-04	0
050684	115310			N 55.933-E	12.673	3.5	95	9.25	-34	18.43	12.30	.0	.149E-04	0
050684	115320			N 55.933-E	12.663	3.1	97	9.25	-8	18.45	12.40	.0	.156E-04	0
050684	115330			N 55.932-E	12.655	2.9	101	8.73	-16	18.50	12.38	.0	.148E-04	0
050684	115430			N 55.917-E	12.605	3.0	99	9.45	65	18.33	12.20	.0	.155E-04	0
050684	115530	20	115524	N 55.897-E	12.552	2.5	100	11.10	121	17.96	12.29	.0	.141E-04	0
050684	115630			N 55.875-E	12.488	2.7	108	12.15	8	17.63	12.26	.0	.145E-04	0
050684	115730			N 55.852-E	12.430	3.9	113	11.88	99	17.76	12.53	.0	.173E-04	0
050684	115830			N 55.828-E	12.365	4.2	116	11.78	-64	17.82	12.43	.0	.161E-04	0
050684	115930			N 55.803-E	12.320	3.9	115	11.92	-8	17.68	12.48	.0	.155E-04	0

DATE	TIME	EVENT	LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH
	CET + 1											
	0E-05-WE1											
050684	120540	21 120534	N 55.695-E	12.090	3.3	115	10.36	-41	18.36	12.66	.0	.130E-04 0
050684	120550		N 55.695-E	12.090	3.0	116	10.85	39	18.48	12.63	.0	.179E-04 0
050684	120600		N 55.697-E	12.105	3.9	110	11.20	10	18.31	12.47	.0	.176E-04 0
050684	120610		N 55.696-E	12.117	3.7	105	12.11	55	18.01	12.58	.0	.177E-04 0
050684	120620		N 55.700-E	12.127	3.0	108	12.84	16	17.66	12.51	.0	.185E-04 0
050684	120630		N 55.700-E	12.133	2.8	116	12.36	-35	17.84	12.13	.0	.192E-04 0
050684	120640		N 55.703-E	12.145	3.5	116	11.45	-30	18.16	12.17	.0	.182E-04 0
050684	120650		N 55.705-E	12.153	3.1	114	11.61	33	18.18	12.23	.0	.181E-04 0
050684	120700		N 55.703-E	12.157	3.5	111	11.47	2	18.14	12.30	.0	.171E-04 0
050684	120710		N 55.705-E	12.168	4.0	109	11.99	33	17.95	12.83	.0	.172E-04 0
050684	120720		N 55.706-E	12.175	3.1	110	11.95	10	17.84	12.29	.0	.171E-04 0
050684	120730		N 55.708-E	12.182	3.1	113	12.03	2	17.78	12.52	.0	.178E-04 0
050684	120740		N 55.712-E	12.192	2.8	115	11.97	2	17.85	12.26	.0	.168E-04 0
050684	120750		N 55.712-E	12.202	2.6	114	12.01	4	17.94	12.11	.0	.168E-04 0
050684	120800		N 55.713-E	12.203	2.9	113	11.99	4	17.95	12.35	.0	.157E-04 0
050684	120810		N 55.713-E	12.212	3.1	112	11.86	-2	18.00	12.15	.0	.159E-04 0
050684	120820		N 55.717-E	12.223	3.5	110	11.80	-2	17.97	12.43	.0	.158E-04 0
050684	120830		N 55.717-E	12.230	3.9	110	11.80	4	18.02	12.49	.0	.159E-04 0
050684	120840		N 55.720-E	12.242	3.4	112	11.97	4	17.96	12.28	.0	.155E-04 0
050684	120850		N 55.718-E	12.245	3.4	114	12.09	2	17.94	12.30	.0	.155E-04 0
050684	120900		N 55.720-E	12.253	3.4	115	12.21	2	17.95	12.37	.0	.153E-04 0
050684	120910		N 55.722-E	12.260	2.6	116	12.21	-6	17.93	12.07	.0	.150E-04 0
050684	120920		N 55.725-E	12.270	2.2	117	12.11	-2	18.02	11.98	.0	.155E-04 0
050684	120930		N 55.727-E	12.277	3.3	114	12.05	-6	18.04	12.15	.0	.145E-04 0
050684	120940		N 55.727-E	12.288	3.3	113	12.05	16	18.07	12.44	.0	.148E-04 0
050684	120950		N 55.727-E	12.298	3.6	115	12.42	6	17.90	12.15	.0	.146E-04 0
050684	121000		N 55.728-E	12.305	4.1	118	12.32	-8	18.09	12.37	.0	.145E-04 0
050684	121010		N 55.730-E	12.312	3.3	122	12.01	-18	18.11	12.18	.0	.144E-04 0
050684	121020		N 55.733-E	12.330	3.5	119	11.99	10	18.12	12.28	.0	.146E-04 0
050684	121030		N 55.733-E	12.338	3.6	119	12.19	6	17.95	12.20	.0	.143E-04 0
050684	121040		N 55.735-E	12.343	3.2	118	12.23	-8	17.94	12.23	.0	.145E-04 0
050684	121050		N 55.735-E	12.350	3.6	117	12.13	8	17.97	12.19	.0	.145E-04 0
050684	121100		N 55.733-E	12.367	4.4	114	12.23	4	17.88	12.25	.0	.143E-04 0
050684	121110		N 55.733-E	12.370	3.5	117	12.30	2	17.89	12.33	.0	.143E-04 0
050684	121120		N 55.733-E	12.378	3.5	117	12.23	-2	17.87	12.20	.0	.142E-04 0
050684	121130		N 55.733-E	12.392	4.1	115	12.21	6	17.91	12.31	.0	.138E-04 0
050684	121140		N 55.732-E	12.393	4.7	120	12.23	4	17.97	12.34	.0	.147E-04 0
050684	121150		N 55.732-E	12.398	4.6	116	12.03	-10	17.95	12.27	.0	.146E-04 0
050684	121200		N 55.732-E	12.413	3.6	121	12.09	12	17.98	12.34	.0	.147E-04 0
050684	121210		N 55.732-E	12.418	3.4	119	12.19	-2	17.94	12.29	.0	.144E-04 0
050684	121220		N 55.733-E	12.425	3.5	120	12.38	6	17.88	12.27	.0	.141E-04 0
050684	121230		N 55.733-E	12.435	3.5	117	12.44	2	17.81	12.27	.0	.144E-04 0
050684	121240		N 55.732-E	12.442	3.3	117	12.38	-8	17.80	12.29	.0	.146E-04 0
050684	121250		N 55.733-E	12.452	3.1	117	12.26	0	17.79	12.33	.0	.142E-04 0
050684	121300		N 55.733-E	12.458	2.5	118	12.13	-4	17.80	12.32	.0	.139E-04 0
050684	121310		N 55.735-E	12.470	2.9	117	12.07	-4	17.86	12.35	.0	.141E-04 0
050684	121320		N 55.735-E	12.478	3.2	116	12.09	2	17.85	12.40	.0	.137E-04 0
050684	121330	22 121329	N 55.735-E	12.487	2.9	116	12.11	6	17.86	12.41	.0	.141E-04 0
050684	121340		N 55.737-E	12.497	2.4	117	12.23	6	17.86	12.40	.0	.139E-04 0
050684	121350		N 55.735-E	12.502	1.6	116	12.30	4	17.92	12.40	.0	.137E-04 0
050684	121400		N 55.737-E	12.517	1.2	116	12.38	8	17.89	12.39	.0	.137E-04 0
050684	121410		N 55.735-E	12.525	1.5	115	12.48	6	17.90	12.42	.0	.138E-04 0
050684	121420		N 55.735-E	12.528	1.2	116	12.50	0	17.91	12.37	.0	.134E-04 0
050684	121430		N 55.735-E	12.543	1.6	117	12.36	-10	17.97	12.43	.0	.132E-04 0
050684	121440		N 55.737-E	12.557	1.4	118	12.21	-2	18.03	12.49	.0	.126E-04 0
050684	121450		N 55.738-E	12.567	1.7	119	12.17	2	18.15	12.13	.0	.127E-04 0
050684	121500		N 55.738-E	12.592	1.7	118	12.23	6	18.16	12.16	.0	.126E-04 0
050684	121510		N 55.738-E	12.587	1.5	117	12.32	6	18.10	12.21	.0	.121E-04 0
050684	121520	23 121515	N 55.740-E	12.593	1.8	118	12.46	6	18.11	11.97	.0	.120E-04 0
050684	121530		N 55.740-E	12.598	1.6	117	12.48	-2	18.04	12.12	.0	.119E-04 0
050684	121540		N 55.740-E	12.610	1.6	117	12.44	-2	18.07	11.82	.0	.117E-04 0
050684	121550		N 55.740-E	12.622	1.6	117	12.42	0	18.00	12.13	.0	.115E-04 0
050684	121600		N 55.740-E	12.627	1.3	118	12.34	-4	17.95	12.24	.0	.118E-04 0
050684	121610		N 55.740-E	12.637	1.2	118	12.34	4	17.96	12.15	.0	.123E-04 0
050684	121620		N 55.742-E	12.647	1.5	117	12.32	2	17.96	12.14	.0	.119E-04 0
050684	121630		N 55.742-E	12.652	1.6	117	12.34	2	17.95	12.06	.0	.121E-04 0

DATE	TIME	EVENT		LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1													
050684	121640			N 55.742-E	12.663	2.1	117	12.36	0	17.97	11.97	.0	.123E-04	0
050684	121650			N 55.740-E	12.670	1.9	117	12.32	-4	17.97	11.99	.0	.120E-04	0
050684	121700			N 55.740-E	12.675	1.6	118	12.32	4	18.03	11.87	.0	.117E-04	0
050684	121710			N 55.743-E	12.683	2.1	117	12.26	-2	18.11	11.81	.0	.115E-04	0
050684	121720			N 55.743-E	12.690	1.6	118	12.26	2	18.17	11.77	.0	.113E-04	0
050684	121730			N 55.743-E	12.697	1.8	117	12.15	-4	18.16	11.81	.0	.111E-04	0
050684	121740			N 55.742-E	12.707	2.7	118	12.15	4	18.24	11.64	.0	.113E-04	0
050684	121750			N 55.743-E	12.715	2.2	117	12.21	2	18.28	11.69	.0	.111E-04	0
050684	121800			N 55.743-E	12.723	1.9	116	12.23	2	18.09	11.38	.0	.109E-04	0
050684	121810			N 55.743-E	12.737	2.0	116	12.26	2	18.10	11.84	.0	.112E-04	0
050684	121820			N 55.743-E	12.745	1.8	116	12.28	2	18.08	11.91	.0	.112E-04	0
050684	121830			N 55.745-E	12.752	1.9	117	12.32	2	18.11	11.70	.0	.111E-04	0
050684	121840			N 55.745-E	12.763	2.0	117	12.28	0	18.15	11.60	.0	.106E-04	0
050684	121850			N 55.745-E	12.768	2.5	116	12.32	4	18.20	11.59	.0	.108E-04	0
050684	121900			N 55.745-E	12.780	2.5	117	12.23	-2	18.22	11.43	.0	.105E-04	0
050684	121910			N 55.747-E	12.788	2.4	117	12.07	-6	18.16	11.62	.0	.104E-04	0
050684	121920			N 55.745-E	12.797	2.5	117	12.03	0	18.12	11.88	.0	.106E-04	0
050684	121930			N 55.747-E	12.805	2.1	115	12.13	6	18.12	11.78	.0	.111E-04	0
050684	121940			N 55.750-E	12.810	2.3	114	12.15	6	17.99	12.02	.0	.111E-04	0
050684	121950			N 55.747-E	12.818	3.0	114	12.11	-8	17.96	12.07	.0	.111E-04	0
050684	122000			N 55.747-E	12.827	2.7	115	12.01	-4	17.93	12.20	.0	.114E-04	0
050684	122010			N 55.747-E	12.835	3.1	118	11.99	-2	18.00	12.01	.0	.116E-04	0
050684	122020			N 55.745-E	12.843	3.4	116	12.01	8	17.95	12.12	.0	.113E-04	0
050684	122030			N 55.745-E	12.848	3.3	116	12.19	6	17.85	12.04	.0	.114E-04	0
050684	122040			N 55.747-E	12.860	3.4	116	12.13	6	17.82	11.80	.0	.112E-04	0
050684	122050			N 55.745-E	12.863	3.0	117	12.26	4	17.90	11.59	.0	.112E-04	0
050684	122100			N 55.747-E	12.875	2.9	116	12.36	6	17.88	11.43	.0	.107E-04	0
050684	122110			N 55.747-E	12.885	3.7	115	12.36	-2	17.76	11.88	.0	.106E-04	0
050684	122120			N 55.748-E	12.890	4.0	116	12.19	-10	17.90	11.42	.0	.110E-04	0
050684	122130			N 55.748-E	12.902	3.1	118	12.01	-4	18.07	11.22	.0	.103E-04	0
050684	122140			N 55.750-E	12.907	3.2	117	11.92	-2	18.13	11.15	.0	.101E-04	0
050684	122150			N 55.750-E	12.913	3.6	114	12.03	4	17.96	11.57	.0	.994E-05	0
050684	122200	24	122152	N 55.748-E	12.923	4.2	114	12.07	0	17.99	11.34	.0	.102E-04	0
050684	122210			N 55.748-E	12.928	3.1	114	12.07	0	17.94	11.41	.0	.101E-04	0
050684	122220			N 55.750-E	12.937	3.1	114	12.05	0	17.88	11.57	.0	.103E-04	0
050684	122230			N 55.750-E	12.947	3.2	114	12.03	-4	17.95	11.30	.0	.104E-04	0
050684	122240			N 55.750-E	12.960	3.1	115	11.92	0	17.93	11.58	.0	.107E-04	0
050684	122250			N 55.750-E	12.965	2.5	115	11.95	4	17.95	11.46	.0	.106E-04	0
050684	122300			N 55.752-E	12.978	2.6	114	12.05	2	17.77	11.60	.0	.111E-04	0
050684	122310			N 55.750-E	12.990	2.7	114	12.13	2	17.75	11.52	.0	.108E-04	0
050684	122320			N 55.750-E	12.998	2.6	114	12.19	4	17.82	11.31	.0	.111E-04	0
050684	122330			N 55.750-E	13.007	2.9	113	12.11	-6	17.76	11.59	.0	.107E-04	0
050684	122340			N 55.750-E	13.017	2.7	113	11.92	-10	17.76	11.53	.0	.106E-04	0
050684	122350			N 55.750-E	13.020	2.9	115	11.74	-2	17.71	11.81	.0	.110E-04	0
050684	122400			N 55.752-E	13.030	2.6	115	11.80	4	17.73	11.62	.0	.112E-04	0
050684	122410			N 55.748-E	13.040	2.7	113	11.99	6	17.81	11.29	.0	.113E-04	0
050684	122420			N 55.747-E	13.043	2.4	111	12.05	-2	17.66	11.59	.0	.111E-04	0
050684	122430			N 55.747-E	13.050	3.0	111	12.07	2	17.64	11.67	.0	.111E-04	0
050684	122440			N 55.752-E	13.063	3.0	111	12.03	0	17.63	11.59	.0	.110E-04	0
050684	122450			N 55.750-E	13.070	3.7	112	11.97	-6	17.66	11.82	.0	.110E-04	0
050684	122500			N 55.752-E	13.075	2.9	115	11.92	-4	17.84	11.22	.0	.111E-04	0
050684	122510	25	122503	N 55.752-E	13.088	2.3	112	11.88	-2	17.66	11.65	.0	.107E-04	0
	0E-05-VERT2													
050684	135450			N 55.257-E	13.022	1.6	119	32.85	2	14.30	6.10	.0	.848E-05	0
050684	135550			N 55.270-E	13.058	1.9	120	32.67	-6	14.46	5.85	.0	.831E-05	0
050684	135650	23	135626	N 55.298-E	13.082	1.5	131	31.38	-131	15.11	5.74	.0	.850E-05	0
050684	135750	24	135715	N 55.342-E	13.110	1.3	144	25.08	-259	16.57	8.12	.0	.852E-05	0
050684	135850	26	135829	N 55.375-E	13.148	3.2	144	19.73	-222	17.68	9.66	.0	.947E-05	0
050684	135950	27	135903	N 55.405-E	13.170	3.2	143	14.69	-213	18.81	10.52	.0	.104E-04	0
050684	140050			N 55.435-E	13.215	3.6	133	12.55	-80	19.17	10.81	.0	.108E-04	0
050684	140150			N 55.455-E	13.272	4.2	126	11.86	-57	19.28	10.73	.0	.106E-04	0
050684	140250	28	140158	N 55.480-E	13.298	3.8	123	11.20	8	19.45	10.95	.0	.105E-04	0
050684	140350			N 55.495-E	13.297	4.2	119	11.06	2	19.59	11.16	.0	.106E-04	0
050684	140450			N 55.522-E	13.312	3.9	102	9.39	-131	19.37	11.01	.0	.109E-04	0
050684	140550			N 55.530-E	13.332	4.9	98	6.61	-169	19.89	11.43	.0	.111E-04	0
050684	140650	29	140554	N 55.525-E	13.347	4.9	77	4.58	6	20.52	12.34	.0	.115E-04	0
050684	140750			N 55.525-E	13.350	5.5	0	4.52	2	20.54	-5.78	.0	.114E-04	0

DATE	TIME	EVENT	LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1												
	0E-12-WE1												
120684	125747	30 125740	N 55.717-E	12.492	2.7	132	6.10	-2	12.36	4.50	.1	.323E-05	0
120684	125757		N 55.717-E	12.492	3.3	132	5.90	-10	12.45	4.54	.1	.330E-05	0
120684	125807		N 55.717-E	12.505	2.9	131	6.57	18	12.36	4.43	.1	.318E-05	0
120684	125817		N 55.717-E	12.512	3.8	130	7.26	22	12.40	4.51	.1	.325E-05	0
120684	125827		N 55.717-E	12.520	3.4	137	7.41	14	12.52	4.45	.1	.344E-05	0
120684	125837		N 55.717-E	12.533	3.2	140	7.06	-59	12.69	4.21	.1	.352E-05	0
120684	125847		N 55.718-E	12.543	3.2	147	6.26	-20	13.00	4.35	.1	.370E-05	0
120684	125857	31 125851	N 55.717-E	12.548	3.1	147	6.16	-2	13.03	4.26	.1	.385E-05	0
120684	125907		N 55.717-E	12.560	2.6	142	6.22	6	12.85	4.15	.1	.394E-05	0
120684	125917		N 55.717-E	12.578	2.4	140	6.33	2	12.70	3.99	.1	.397E-05	0
120684	125927		N 55.717-E	12.587	2.3	141	6.06	-20	12.69	4.25	.1	.399E-05	0
120684	125937		N 55.717-E	12.592	2.1	144	5.37	-30	12.94	4.16	.1	.385E-05	0
120684	125947		N 55.717-E	12.600	2.5	141	5.74	34	12.90	4.28	.1	.405E-05	0
120684	125957		N 55.718-E	12.620	2.6	138	6.37	32	12.71	4.48	.1	.386E-05	0
120684	130007		N 55.718-E	12.623	2.1	141	7.08	18	12.74	3.98	.1	.424E-05	0
120684	130017		N 55.717-E	12.642	1.7	143	7.02	-12	12.76	3.96	.1	.498E-05	0
120684	130027		N 55.717-E	12.657	2.1	140	7.12	12	12.66	4.27	.1	.537E-05	0
120684	130037		N 55.720-E	12.672	1.9	143	6.73	-26	12.76	4.08	.1	.530E-05	0
120684	130047		N 55.720-E	12.687	2.1	143	6.90	28	12.78	4.10	.1	.529E-05	0
120684	130057		N 55.720-E	12.730	2.2	143	7.20	-2	12.55	4.40	.1	.531E-05	0
120684	130107		N 55.718-E	12.747	1.6	145	7.24	8	12.42	4.63	.1	.514E-05	0
120684	130117		N 55.718-E	12.763	1.2	142	7.83	32	12.19	4.54	.1	.467E-05	0
120684	130127		N 55.718-E	12.777	2.0	145	7.51	-30	12.16	5.46	.1	.434E-05	0
120684	130137		N 55.718-E	12.793	2.2	149	7.04	-20	12.38	5.38	.1	.461E-05	0
120684	130147		N 55.718-E	12.802	2.0	152	6.59	-16	12.65	5.40	.1	.497E-05	0
120684	130157		N 55.718-E	12.817	2.4	147	6.43	4	12.69	5.13	.1	.507E-05	0
120684	130207		N 55.717-E	12.828	2.4	149	6.57	16	12.45	5.64	.1	.502E-05	0
120684	130217		N 55.715-E	12.872	2.8	151	6.51	-10	12.31	6.71	.1	.451E-05	0
120684	130227		N 55.717-E	12.865	2.5	151	6.37	-8	12.46	5.97	.1	.449E-05	0
120684	130237		N 55.718-E	12.877	2.0	147	6.51	14	12.42	5.71	.1	.468E-05	0
120684	130247		N 55.718-E	12.887	1.7	146	6.35	-22	12.42	5.63	.1	.477E-05	0
120684	130257		N 55.717-E	12.895	1.4	146	5.94	-12	12.52	5.63	.1	.506E-05	0
120684	130307	32 130259	N 55.717-E	12.913	1.1	145	6.12	6	12.35	5.77	.1	.507E-05	0
120684	130317		N 55.718-E	12.927	.9	145	6.10	0	12.22	5.76	.1	.484E-05	0
120684	130327		N 55.720-E	12.935	.9	143	6.08	-2	12.25	5.71	.1	.474E-05	0
120684	130337		N 55.720-E	12.968	1.0	142	6.18	8	12.24	5.55	.1	.472E-05	0
120684	130347		N 55.723-E	12.978	.9	143	6.08	-18	12.25	5.46	.1	.520E-05	0
120684	130357		N 55.723-E	12.997	.8	144	5.86	4	12.32	5.47	.1	.509E-05	0
120684	130407		N 55.722-E	13.007	.9	144	5.78	0	12.36	5.44	.1	.499E-05	0
120684	130417		N 55.727-E	13.018	1.0	140	6.16	24	12.34	5.30	.1	.524E-05	0
120684	130427		N 55.728-E	13.025	1.6	137	6.69	20	12.14	5.51	.1	.524E-05	0
120684	130437		N 55.728-E	13.030	2.2	136	6.85	6	12.15	5.61	.1	.508E-05	0
120684	130447		N 55.728-E	13.040	2.6	137	6.94	12	12.17	5.70	.1	.486E-05	0
120684	130457		N 55.733-E	13.052	2.2	136	7.00	2	12.12	5.52	.1	.502E-05	0
120684	130507		N 55.735-E	13.060	2.2	140	6.53	-34	12.33	5.21	.1	.494E-05	0
120684	130517		N 55.738-E	13.075	2.6	145	6.16	-4	12.70	6.34	.1	.496E-05	0
120684	130527		N 55.740-E	13.085	3.0	145	6.18	8	12.74	5.91	.1	.470E-05	0
120684	130537		N 55.742-E	13.095	2.9	143	5.94	-14	12.69	5.62	.1	.481E-05	0
120684	130547		N 55.742-E	13.105	2.8	146	5.41	-28	12.90	5.41	.1	.507E-05	0
120684	130557		N 55.747-E	13.127	3.2	145	5.72	40	12.99	5.85	.1	.513E-05	0
120684	130607		N 55.748-E	13.147	2.6	138	6.51	28	12.60	5.05	.1	.550E-05	0
120684	130617		N 55.750-E	13.150	2.6	137	7.00	26	12.58	5.39	.1	.569E-05	0
120684	130627		N 55.752-E	13.158	2.6	139	6.73	-20	12.50	5.21	.1	.558E-05	0
120684	130637		N 55.752-E	13.168	2.7	142	6.41	-10	12.72	5.09	.1	.584E-05	0
120684	130647		N 55.755-E	13.193	2.6	142	6.14	-8	12.72	4.82	.1	.567E-05	0
120684	130657		N 55.760-E	13.203	2.2	139	6.02	-10	12.72	4.21	.1	.561E-05	0
120684	130707		N 55.762-E	13.212	2.4	141	5.94	-4	12.79	4.80	.1	.596E-05	0
120684	130717		N 55.762-E	13.220	3.7	137	5.92	6	12.94	5.30	.1	.575E-05	0
120684	130727	33 130722	N 55.765-E	13.230	3.0	139	6.20	18	12.82	4.63	.1	.560E-05	0
120684	130737		N 55.763-E	13.235	3.2	138	6.16	-10	12.84	4.74	.1	.564E-05	0
120684	130747		N 55.767-E	13.253	2.8	144	5.23	-50	13.18	4.66	.1	.585E-05	0

DATE	TIME	EVENT	LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1												
	0E-12-WE3												
120684	131809	5 131808	N 55.702-E	12.623	3.1	145	2.50	-38	14.04	4.71	.1	.388E-05	0
120684	131819		N 55.700-E	12.605	3.3	147	1.78	-24	14.42	4.60	.1	.386E-05	0
120684	131829		N 55.702-E	12.600	3.3	142	2.12	20	14.28	4.57	.1	.381E-05	0
120684	131839		N 55.703-E	12.592	3.2	142	1.78	-42	14.31	4.73	.1	.365E-05	0
120684	131849		N 55.710-E	12.590	3.2	141	.98	-42	14.49	4.47	.1	.648E-05	0
120684	131859		N 55.710-E	12.583	2.5	146	.24	-43	14.66	4.32	.1	.642E-05	0
120684	131909		N 55.703-E	12.590	2.1	145	.12	25	14.73	4.51	.1	.470E-05	0
120684	131919		N 55.705-E	12.605	2.0	141	.36	3	14.59	4.46	.1	.415E-05	0
120684	131929	6 131929	N 55.705-E	12.612	2.5	141	.82	18	14.50	4.69	.1	.404E-05	0
120684	131939		N 55.707-E	12.623	2.2	143	.98	8	14.50	4.02	.1	.431E-05	0
120684	131949		N 55.707-E	12.628	2.2	148	.74	-14	14.62	4.19	.1	.459E-05	0
120684	131959		N 55.705-E	12.680	1.7	150	.16	-29	14.83	3.96	.1	.469E-05	0
120684	132009		N 55.708-E	12.693	2.2	152	-.20	0	14.93	4.77	.1	.462E-05	0
120684	132019	7 132011	N 55.708-E	12.707	1.8	148	.18	27	14.66	5.08	.1	.446E-05	0
120684	132029		N 55.710-E	12.712	1.2	143	.50	0	14.45	4.71	.1	.437E-05	0
120684	132039		N 55.708-E	12.727	2.0	143	.58	11	14.25	5.46	.1	.436E-05	0
120684	132049		N 55.708-E	12.742	2.7	141	.76	4	13.95	7.02	.1	.442E-05	0
120684	132059		N 55.712-E	12.768	2.6	144	.52	-11	14.00	6.87	.1	.480E-05	0
120684	132109		N 55.712-E	12.773	2.1	144	.62	6	14.00	6.60	.1	.475E-05	0
120684	132119		N 55.712-E	12.783	1.5	144	.52	0	14.09	6.34	.1	.486E-05	0
120684	132129		N 55.713-E	12.803	1.5	146	.30	-3	14.25	6.19	.1	.479E-05	0
120684	132139		N 55.713-E	12.808	2.0	147	.10	-1	14.22	6.52	.1	.480E-05	0
120684	132149		N 55.715-E	12.822	2.8	147	.28	17	13.97	7.60	.1	.442E-05	0
120684	132159		N 55.715-E	12.847	2.6	145	.56	15	13.85	7.29	.1	.414E-05	0
120684	132209		N 55.715-E	12.890	2.4	144	.50	-15	13.85	6.94	.1	.415E-05	0
120684	132219		N 55.717-E	12.905	1.9	146	.28	-9	13.89	6.74	.1	.408E-05	0
120684	132229		N 55.718-E	12.912	2.1	147	.26	-3	13.72	7.79	.1	.398E-05	0
120684	132239		N 55.718-E	12.918	1.8	147	.14	-5	13.68	7.69	.1	.355E-05	0
120684	132249	8 132243	N 55.720-E	12.930	1.9	144	.34	13	13.58	7.46	.1	.342E-05	0
120684	132259	9 132250	N 55.720-E	12.930	1.9	143	.36	0	13.49	7.39	.1	.362E-05	0
120684	132309		N 55.722-E	12.950	2.1	142	.34	1	13.51	7.00	.1	.355E-05	0
120684	132319	10 132313	N 55.725-E	12.960	1.8	135	.82	51	13.30	7.23	.1	.370E-05	0
	0E-12-WE5												
120684	132929	14 132920	N 55.695-E	12.633	2.9	131	.22	-25	14.76	3.86	.1	.444E-05	0
120684	132939		N 55.700-E	12.633	3.3	134	.38	25	14.93	4.56	.1	.453E-05	0
120684	132949		N 55.703-E	12.632	3.1	140	.18	-31	14.85	4.66	.1	.468E-05	0
120684	132959		N 55.702-E	12.633	2.4	152	-1.24	-41	15.29	5.10	.1	.466E-05	0
120684	133009		N 55.703-E	12.638	2.6	154	-1.93	-15	15.55	5.32	.1	.451E-05	0
120684	133019	15 133011	N 55.705-E	12.650	2.3	154	-2.01	-5	15.56	4.95	.1	.421E-05	0
120684	133029		N 55.707-E	12.637	2.1	151	-2.17	-3	15.51	5.29	.1	.383E-05	0
120684	133039		N 55.707-E	12.638	2.7	150	-2.23	1	15.44	6.13	.1	.465E-05	0
120684	133049		N 55.707-E	12.652	2.7	148	-2.27	3	15.38	6.09	.1	.486E-05	0
120684	133059		N 55.708-E	12.655	3.2	146	-2.31	3	15.34	6.48	.1	.512E-05	0
120684	133109		N 55.708-E	12.667	3.0	147	-2.31	-1	15.36	6.74	.1	.526E-05	0
120684	133119		N 55.710-E	12.680	3.0	147	-2.35	-3	15.42	6.91	.1	.568E-05	0
120684	133129		N 55.712-E	12.693	2.9	149	-2.29	5	15.22	7.66	.1	.536E-05	0
120684	133139		N 55.708-E	12.718	3.3	147	-2.31	0	15.09	7.70	.1	.489E-05	0
120684	133149		N 55.712-E	12.735	2.8	145	-2.33	-5	15.07	6.65	.1	.470E-05	0
120684	133159		N 55.713-E	12.738	2.6	142	-2.35	0	15.00	6.43	.1	.470E-05	0
120684	133209		N 55.713-E	12.747	3.4	142	-2.33	7	15.07	6.52	.1	.490E-05	0
120684	133219		N 55.713-E	12.767	3.0	146	-2.29	3	15.13	7.23	.1	.590E-05	0
120684	133229		N 55.713-E	12.770	2.6	149	-2.33	-1	14.84	7.72	.1	.564E-05	0
120684	133239		N 55.715-E	12.780	2.8	149	-2.31	-1	14.76	8.59	.1	.466E-05	0
120684	133249		N 55.715-E	12.867	2.7	148	-2.31	1	14.64	8.42	.1	.409E-05	0
120684	133259		N 55.715-E	12.867	2.8	146	-2.33	0	14.50	8.51	.1	.375E-05	0
120684	133309		N 55.717-E	12.867	3.4	145	-2.35	-1	14.41	8.69	.1	.349E-05	0
120684	133319		N 55.718-E	12.888	3.6	144	-2.37	1	14.42	8.52	.1	.338E-05	0
120684	133329	16 133326	N 55.718-E	12.895	2.9	142	-2.17	7	14.29	8.26	.1	.338E-05	0

DATE	TIME	EVENT	LA	LO	R	IAS	FLL	A/D	TEMP	DP	F	NEPH	
	CET + 1												
120684	133339		N 55.720-E	12.908	2.4	142	-1.99	3	14.19	8.01	.1	.329E-05	0
120684	133349		N 55.720-E	12.915	2.5	141	-1.85	5	14.14	7.99	.1	.342E-05	0
120684	133359	17 133358	N 55.722-E	12.930	2.7	131	-1.30	53	14.04	7.89	.1	.344E-05	0
120684	133409		N 55.723-E	12.943	3.4	102	1.80	156	13.10	6.93	.1	.363E-05	0
120684	133419		N 55.730-E	12.948	2.3	104	2.84	24	12.49	6.07	.1	.400E-05	0
120684	133429		N 55.732-E	12.942	1.7	111	2.87	6	12.41	6.18	.1	.441E-05	0
120684	133439		N 55.733-E	12.937	1.7	114	3.09	4	12.28	6.38	.1	.471E-05	0
120684	133449		N 55.738-E	12.937	2.1	114	3.91	70	12.08	7.04	.1	.458E-05	0
120684	133459		N 55.743-E	12.935	2.3	116	4.99	24	11.90	6.53	.1	.434E-05	0
120684	133509		N 55.748-E	12.930	1.8	119	5.11	22	12.02	6.43	.1	.449E-05	0
120684	133519		N 55.753-E	12.920	2.0	121	5.47	10	11.99	6.16	.1	.497E-05	0
120684	133529		N 55.762-E	12.912	2.2	120	6.22	38	11.80	5.99	.1	.484E-05	0
120684	133539		N 55.763-E	12.908	1.8	119	6.61	8	11.67	5.38	.1	.478E-05	0
120684	133549		N 55.770-E	12.922	2.4	120	7.12	32	11.41	6.93	.1	.461E-05	0
120684	133649		N 55.803-E	12.898	1.7	131	8.22	61	11.73	4.45	.1	.463E-05	0
120684	133749		N 55.833-E	12.882	1.9	142	8.45	-2	11.92	4.47	.1	.382E-05	0
120684	133849		N 55.872-E	12.782	1.8	143	8.12	-12	12.12	4.02	.1	.358E-05	0
120684	133949		N 55.903-E	12.765	2.0	137	8.98	71	11.71	3.78	.1	.353E-05	0
120684	134049		N 55.938-E	12.750	1.6	133	10.67	88	11.05	3.23	.1	.291E-05	0
120684	134149		N 55.978-E	12.745	2.0	140	10.85	-26	11.18	3.11	.1	.263E-05	0
120684	134249		N 56.022-E	12.757	2.8	140	11.88	-31	10.62	3.16	.1	.239E-05	0
120684	134349	18 134345	N 56.048-E	12.683	2.9	140	12.21	16	10.26	3.10	.1	.202E-05	0
120684	134449	19 134437	N 56.030-E	12.638	3.0	145	12.19	31	10.82	2.43	.1	.215E-05	0
120684	134507		N 56.018-E	12.640	3.1	143	12.01	2	11.07	2.52	.1	.233E-05	0
120684	134517		N 56.012-E	12.645	2.7	143	12.07	4	10.96	2.99	.1	.232E-05	0
	0E-12-VERT2												
120684	140227		N 55.370-E	13.220	.7	141	12.13	4	11.08	4.07	.1	.553E-05	0
120684	140237		N 55.357-E	13.222	.6	142	12.07	-4	11.12	3.90	.1	.564E-05	0
120684	140247		N 55.350-E	13.218	.8	141	12.05	2	11.16	3.90	.1	.567E-05	0
120684	140257		N 55.343-E	13.222	.8	142	12.05	0	11.16	3.98	.1	.564E-05	0
120684	140307	22 140259	N 55.337-E	13.230	.7	141	12.07	0	11.18	3.98	.1	.563E-05	0
120684	140317		N 55.335-E	13.232	.6	142	11.68	-41	11.28	4.00	.1	.577E-05	0
120684	140327		N 55.325-E	13.240	.8	144	10.71	-30	11.60	4.10	.1	.565E-05	0
120684	140337		N 55.320-E	13.248	.8	140	10.48	0	11.61	4.02	.1	.554E-05	0
120684	140347		N 55.322-E	13.252	.7	146	10.01	-43	11.73	3.99	.1	.547E-05	0
120684	140357		N 55.325-E	13.255	.7	149	11.06	150	11.93	4.27	.1	.529E-05	0
120684	140407		N 55.325-E	13.258	.8	144	10.67	82	11.74	4.39	.1	.525E-05	0
120684	140417		N 55.328-E	13.257	.9	143	10.27	2	11.61	4.21	.1	.553E-05	0
120684	140427		N 55.342-E	13.270	.7	143	10.21	-2	11.63	3.95	.1	.554E-05	0
120684	140437		N 55.357-E	13.277	.7	142	10.27	6	11.59	4.03	.1	.565E-05	0
120684	140447		N 55.362-E	13.280	.6	143	10.27	0	11.57	4.43	.1	.538E-05	0
120684	140457		N 55.363-E	13.285	.7	144	9.92	-18	11.65	4.65	.1	.553E-05	0
120684	140507		N 55.380-E	13.282	1.1	146	9.60	-16	11.80	4.73	.1	.545E-05	0
120684	140517		N 55.387-E	13.290	1.1	148	9.31	-8	11.92	4.70	.1	.523E-05	0
120684	140527		N 55.393-E	13.302	1.2	147	9.23	-2	12.00	4.68	.1	.525E-05	0
120684	140537		N 55.403-E	13.292	2.1	149	8.98	-16	12.09	5.56	.1	.559E-05	0
120684	140547		N 55.405-E	13.302	2.5	153	9.23	71	12.39	5.28	.1	.578E-05	0
120684	140557		N 55.422-E	13.305	2.8	151	8.28	-4	12.51	5.80	.1	.561E-05	0
120684	140607		N 55.428-E	13.313	1.7	150	8.02	-16	12.52	4.84	.1	.568E-05	0
120684	140617		N 55.435-E	13.318	2.4	148	8.06	14	12.58	5.25	.1	.569E-05	0
120684	140627		N 55.438-E	13.315	2.3	141	8.28	0	12.36	4.84	.1	.559E-05	0
120684	140637		N 55.453-E	13.322	2.8	139	8.53	10	12.26	5.24	.1	.562E-05	0
120684	140647		N 55.462-E	13.323	3.3	143	8.71	0	12.29	5.44	.1	.585E-05	0
120684	140657		N 55.468-E	13.325	3.1	141	8.55	-10	12.45	5.66	.1	.590E-05	0
120684	140707	23 140705	N 55.477-E	13.328	2.8	142	8.32	-18	12.52	4.32	.1	.579E-05	0
120684	140717	24 140715	N 55.480-E	13.337	2.9	138	8.35	-24	12.41	4.55	.1	.588E-05	0
120684	140727		N 55.482-E	13.335	2.6	138	8.37	12	12.33	5.12	.1	.594E-05	0
120684	140737		N 55.495-E	13.335	3.8	137	8.75	14	12.32	5.49	.1	.583E-05	0
120684	140747		N 55.493-E	13.348	3.3	133	8.61	-4	12.20	5.21	.1	.603E-05	0
120684	140757		N 55.508-E	13.353	2.8	134	8.57	16	12.20	5.37	.1	.601E-05	0
120684	140807		N 55.515-E	13.360	2.7	128	8.69	8	12.07	4.76	.1	.602E-05	0
120684	140817		N 55.522-E	13.362	2.0	118	8.59	-18	11.81	4.13	.1	.596E-05	0
120684	140827		N 55.528-E	13.362	2.3	114	7.36	-77	11.83	4.91	.1	.627E-05	0
120684	140837		N 55.533-E	13.363	3.4	110	6.14	-69	12.03	5.13	.1	.587E-05	0
120684	140847		N 55.533-E	13.380	4.1	110	4.86	-34	12.37	5.57	.1	.571E-05	0
120684	140857		N 55.540-E	13.383	3.1	103	3.81	-46	12.50	5.44	.1	.566E-05	0
120684	140907		N 55.540-E	13.388	3.4	102	2.89	-44	12.67	5.69	.1	.568E-05	0
120684	140917		N 55.538-E	13.395	3.5	102	1.58	-64	13.00	5.57	.1	.556E-05	0
120684	140927		N 55.537-E	13.392	3.8	98	.54	-32	13.22	6.16	.1	.557E-05	0
120684	140937		N 55.533-E	13.395	3.8	93	-.38	-53	13.44	6.10	.1	.565E-05	0
120684	140947	25 140941	N 55.533-E	13.395	4.8	86	-.92	0	13.58	6.59	.1	.567E-05	0

APPENDIX C

SHIP AND AIRCRAFT SF_6 CONCENTRATION CROSS SECTIONS

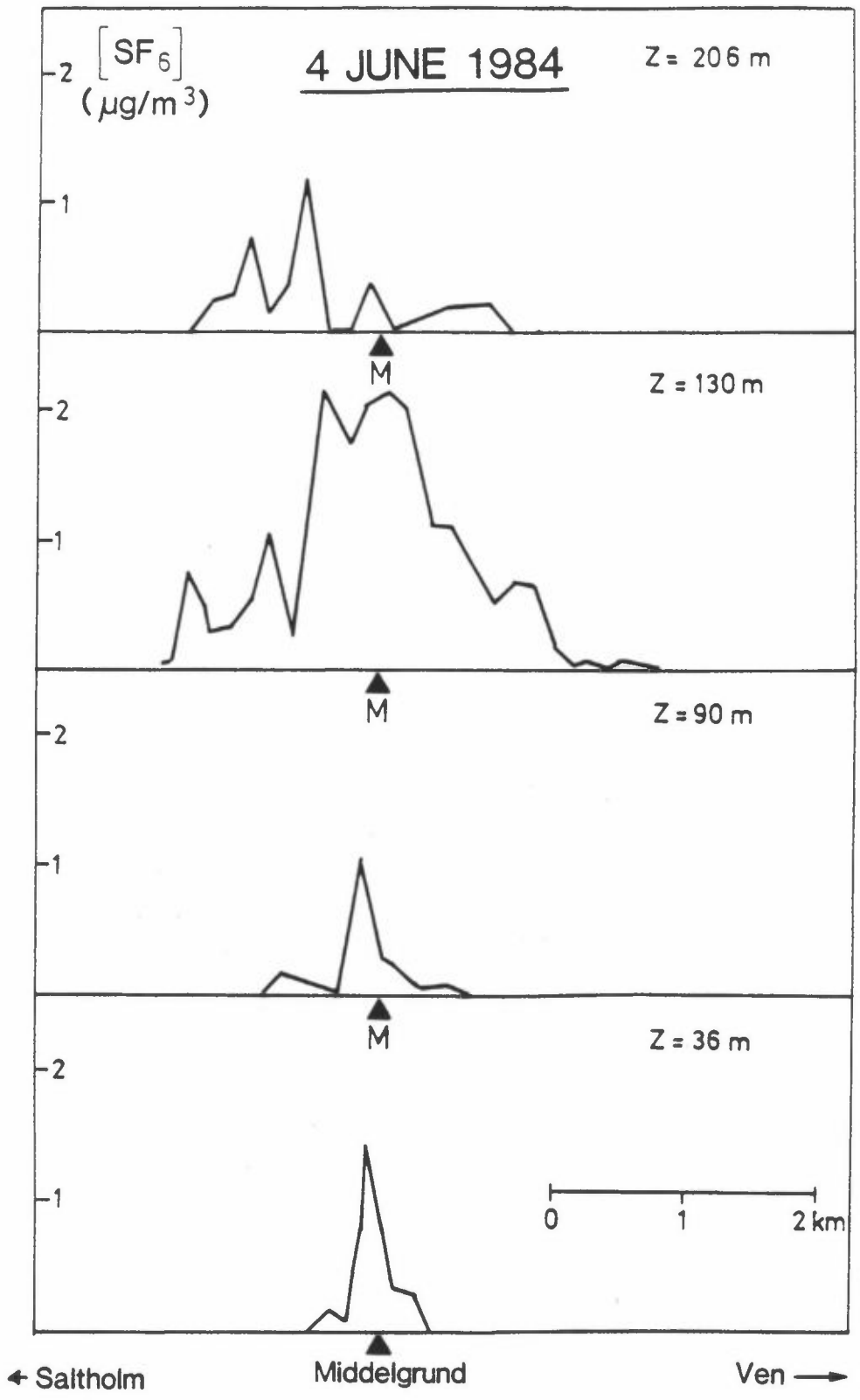


Figure C1: Aircraft traverses.

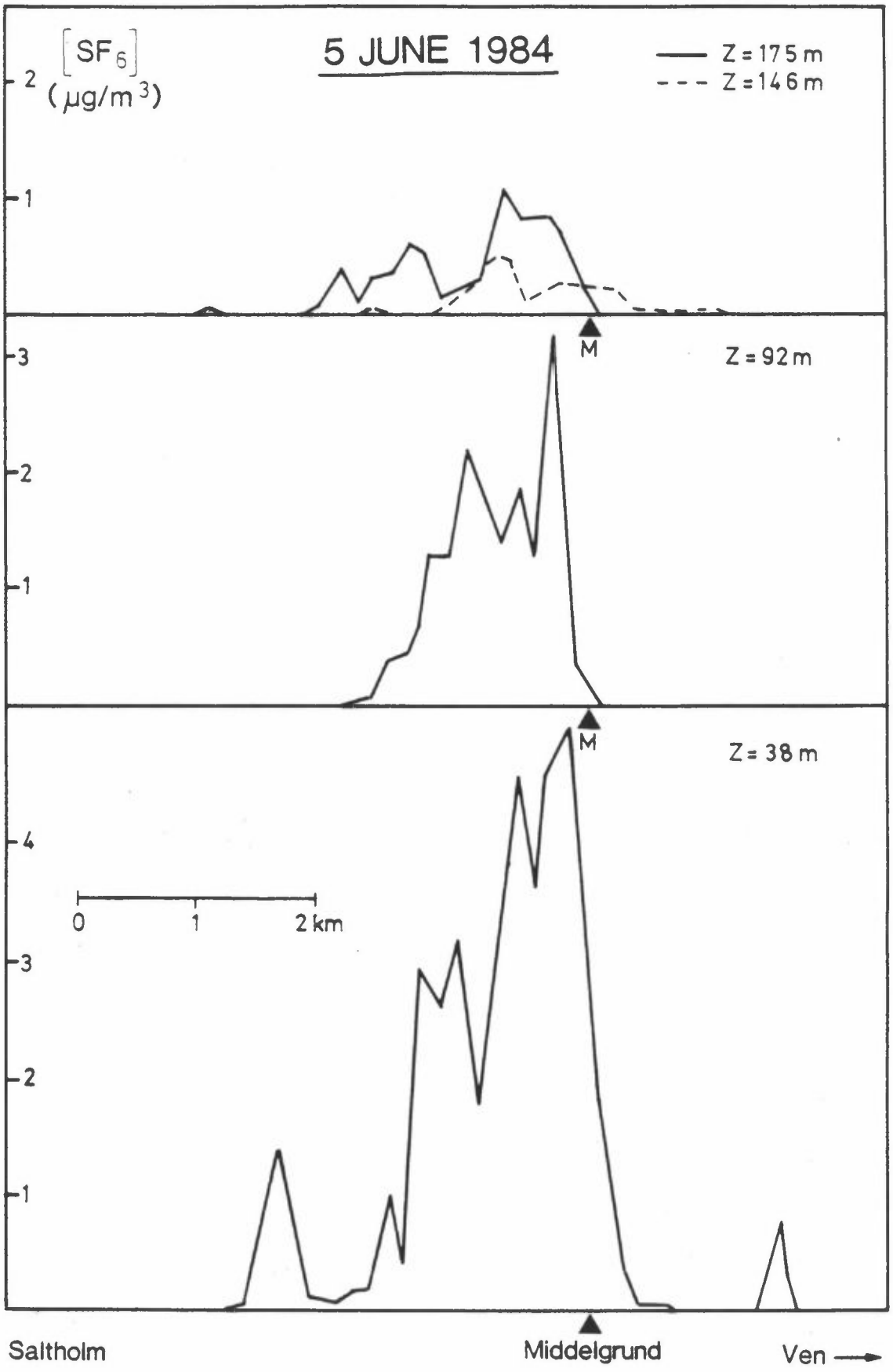


Figure C2: Aircraft traverses.

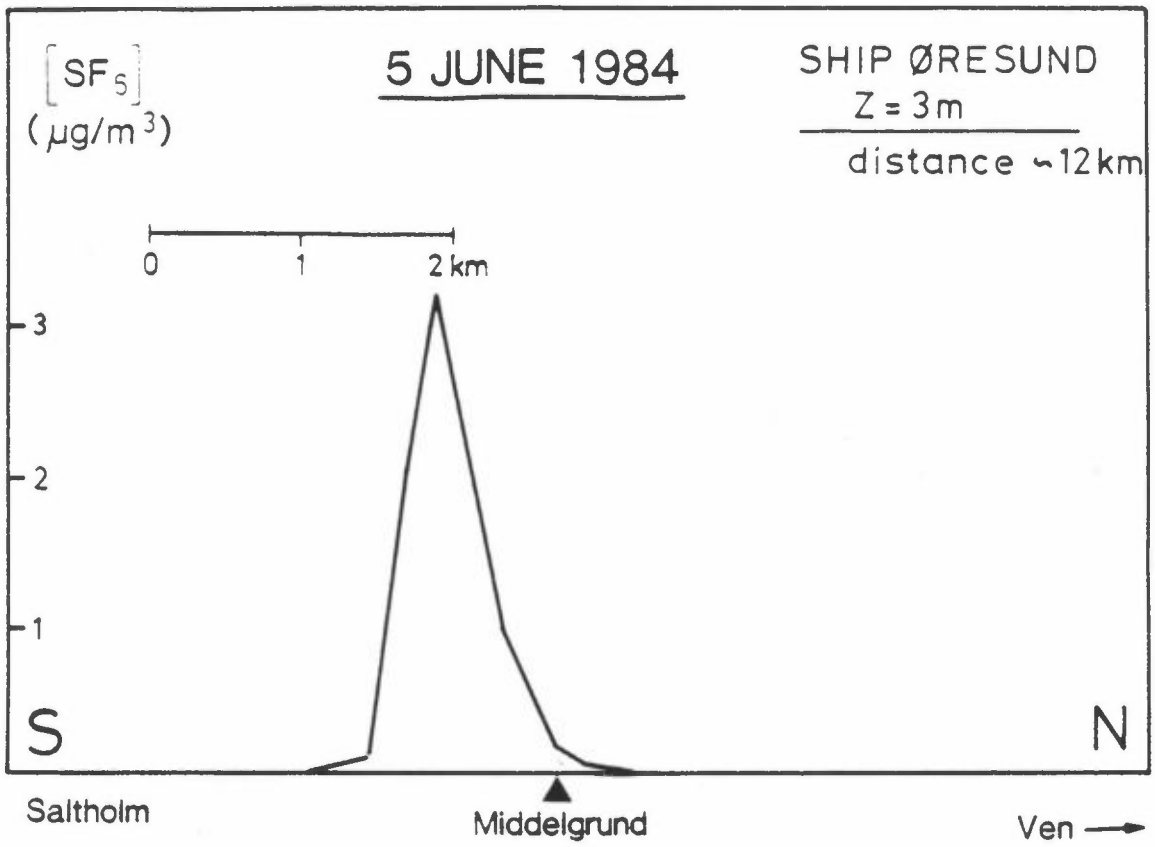


Figure C3: SF_6 measurements from a skip in Øresund.

APPENDIX D

SF_6 CONCENTRATIONS MEASURED AT GROUND LEVEL

STED : SF6 ØRESUND
TEST NR. : 1A
DATO : 84-06-04
TIDSPKT. : 1145-1200 CET
ANT.OBS. : 10
MIN,MAKS X : 36.000 51.000
MIN,MAKS Y : 66.000 81.000

KOORDINATER X	Y	SF6 UG/M3
40.250	80.150	.06
40.200	78.750	.11
39.850	76.950	.03
39.300	75.750	.00
38.850	74.950	.00
38.150	73.450	.00
37.950	72.200	.00
37.900	71.450	.00
37.900	70.350	.00
38.050	69.650	.00

STED : SF6 ØRESUND
TEST NR. : 1B
DATO : 84-06-04
TIDSPKT. : 1200-1215 CET
ANT.OBS. : 10
MIN,MAKS X : 36.000 51.000
MIN,MAKS Y : 66.000 81.000

KOORDINATER X	Y	SF6 UG/M3
40.250	80.150	.14
40.200	78.750	.37
39.850	76.950	.00
39.300	75.750	.00
38.850	74.950	.00
38.150	73.450	.00
37.950	72.200	.00
37.900	71.450	.00
37.900	70.350	.00
38.050	69.650	.00

STED : SF6 ØRESUND
TEST NR. : 2A
DATO : 84-06-05
TIDSPKT. : 1100-1115 CET
ANT.OBS. : 22
MIN,MAKS X : 36.000 51.000
MIN,MAKS Y : 66.000 81.000

KOORDINATER X	Y	SF6 UG/M3
39.350	66.550	.01
38.650	67.700	.02
38.350	68.250	.01
38.200	68.850	.01
37.950	70.050	.01
37.900	70.700	.03
37.900	71.250	.01
37.900	71.850	.02
37.900	72.550	.01
38.100	73.250	.01
38.300	73.700	.02
38.450	74.200	.02
38.700	74.700	.02
39.000	75.150	.08
39.450	75.550	.32
39.650	76.050	.65
39.850	76.650	.87
39.950	77.150	.52
40.150	77.650	.43
40.250	78.100	.41
40.250	78.700	.27
40.300	79.250	.38

STED : SF6 ØRESUND
TEST NR. : 2B
DATO : 84-06-05
TIDSPKT. : 1115-1130 CET
ANT.OBS. : 21
MIN,MAKS X : 36.000 51.000
MIN,MAKS Y : 66.000 81.000

KOORDINATER X	Y	SF6 UG/M3
39.350	66.550	.02
38.650	67.700	.02
38.350	68.250	.01
38.200	68.850	.01
37.950	70.050	.01
37.900	70.700	.07
37.900	71.250	.03
37.900	71.850	.02
37.900	72.550	.01
38.100	73.250	.02
38.300	73.700	.01
38.450	74.200	.01
38.700	74.700	.02
39.000	75.150	.02
39.450	75.550	.06
39.850	76.650	.20
39.950	77.150	.45
40.150	77.650	.63
40.250	78.100	.92
40.250	78.700	.29
40.300	79.250	.35

STED : SF6 ØRESUND
TEST NR. : 2C
DATO : 84-06-05
TIDSPKT. : 1130-1145 CET
ANT.OBS. : 23
MIN,MAKS X : 36.000 51.000
MIN,MAKS Y : 66.000 81.000

KOORDINATER X	Y	SF6 UG/M3
39.350	66.550	.02
38.950	67.150	.01
38.650	67.700	.01
38.350	68.250	.01
38.200	68.850	.01
38.100	69.350	.02
37.950	70.050	.01
37.900	70.700	.01
37.900	71.850	.01
37.900	72.550	.01
37.900	72.550	.01
38.300	73.700	.01
38.450	74.200	.02
38.700	74.700	.01
39.000	75.150	.01
39.450	75.550	.02
39.650	76.050	.02
39.850	76.650	.03
39.950	77.150	.55
40.150	77.650	.31
40.250	78.100	.68
40.250	78.700	.84
40.300	79.250	.70

STED : SF6 ØRESUND
TEST NR. : 2D
DATO : 84-06-05
TIDSPKT. : 1145-1200 CET
ANT.OBS. : 23
MIN,MAKS X : 36.000 51.000
MIN,MAKS Y : 66.000 81.000

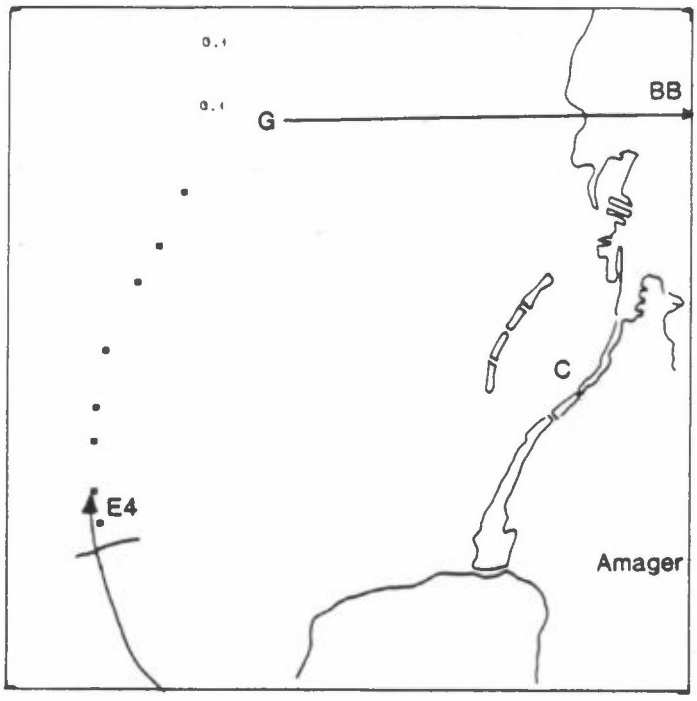
KOORDINATER X	Y	SF6 UG/M3
39.350	66.550	.02
38.950	67.150	.01
38.650	67.700	.01
38.350	68.250	.01
38.200	68.850	.01
38.100	69.350	.02
37.950	70.050	.01
37.900	70.700	.01
37.900	71.250	.01
37.900	71.850	.02
37.900	72.550	.01
38.300	73.700	.01
38.450	74.200	.01
38.700	74.700	.01
39.000	75.150	.02
39.450	75.550	.02
39.650	76.050	.03
39.850	76.650	.03
39.950	77.150	.36
40.150	77.650	.82
40.250	78.100	.78
40.250	78.700	.91
40.300	79.250	.63

STED : SF6 ØRESUND
TEST NR. : 3A
DATO : 84-06-09
TIDSPKT. : 1500-1515 CET
ANT.OBS. : 39
MIN,MAKS X : 18.000 25.000
MIN,MAKS Y : 83.500 90.500

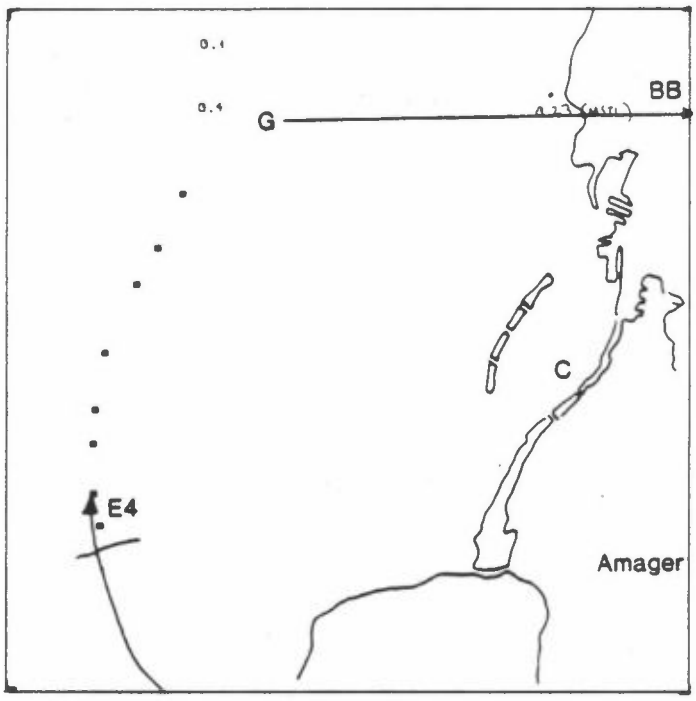
KOORDINATER X	Y	SF6 UG/M3
19.600	86.200	.01
21.100	86.500	.01
21.800	86.500	.04
22.100	85.800	.03
22.200	85.600	1.18
22.300	85.300	1.02
22.600	85.100	.05
23.000	84.900	.01
23.300	84.800	.02
23.600	84.400	.01
23.200	83.800	.02
22.400	83.600	.01
24.600	84.200	.01
24.900	84.600	.01
24.800	85.200	.01
24.700	85.600	.01
24.600	86.500	.01
24.400	87.000	1.52
24.400	87.400	1.05
24.300	87.800	.03
24.200	88.100	.01
23.800	88.600	.06
23.400	89.100	.03
23.100	89.600	.01
23.000	90.000	.02
22.800	90.400	.01
18.300	84.700	.01
18.400	84.700	.02
18.500	84.800	.01
18.600	84.800	.02
18.800	84.800	.01
18.900	84.900	.01
19.000	84.900	.01
19.200	85.000	.01
19.800	85.300	.01
20.600	85.400	.23
20.700	85.100	.35
20.800	84.800	.01
20.950	84.600	.18

STED : SF6 ØRESUND
TEST NR. : 3B
DATO : 84-06-09
TIDSPKT. : 1515-1530 CET
ANT.OBS. : 39
MIN,MAKS X : 18.000 25.000
MIN,MAKS Y : 83.500 90.500

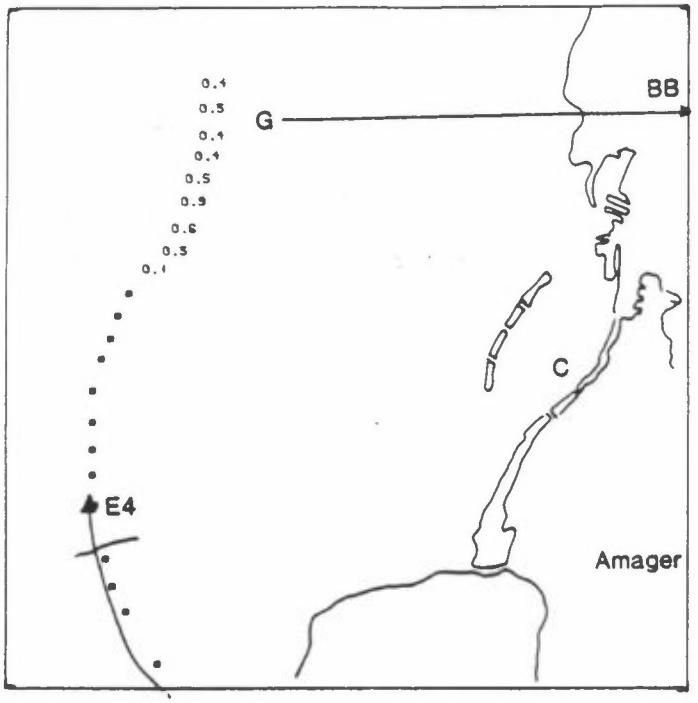
KOORDINATER X	Y	SF6 UG/M3
19.600	86.200	.01
21.100	86.500	.01
21.800	86.500	4.01
22.100	85.800	.01
22.200	85.600	.02
22.300	85.300	.08
22.600	85.100	.00
23.000	84.900	.01
23.300	84.800	.01
23.600	84.400	.02
23.200	83.800	.02
22.400	83.600	.01
24.600	84.200	.01
24.900	84.600	.02
24.800	85.200	.01
24.700	85.600	.01
24.600	86.500	.02
24.400	87.000	.03
24.400	87.400	.16
24.300	87.800	.12
24.200	88.100	.45
23.800	88.600	4.14
23.400	89.100	.03
23.100	89.600	.01
23.000	90.000	.02
22.800	90.400	.01
18.300	84.700	.01
18.400	84.700	.01
18.500	84.800	.01
18.600	84.800	.02
18.800	84.800	.01
18.900	84.900	.01
19.000	84.900	.01
19.200	85.000	.01
19.800	85.300	.01
20.600	85.400	.01
20.700	85.100	4.57
20.800	84.800	.01
20.950	84.600	.01



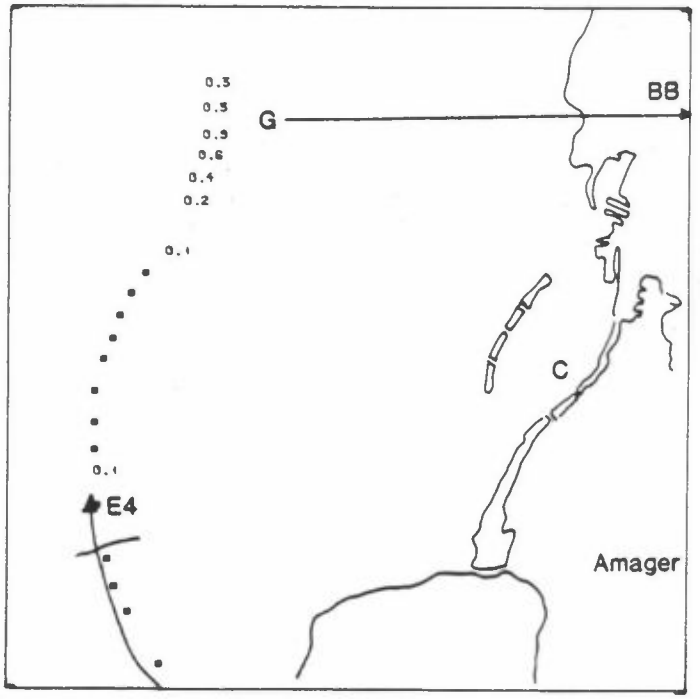
1a: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 4 June 1984, 1145-1200 CET.



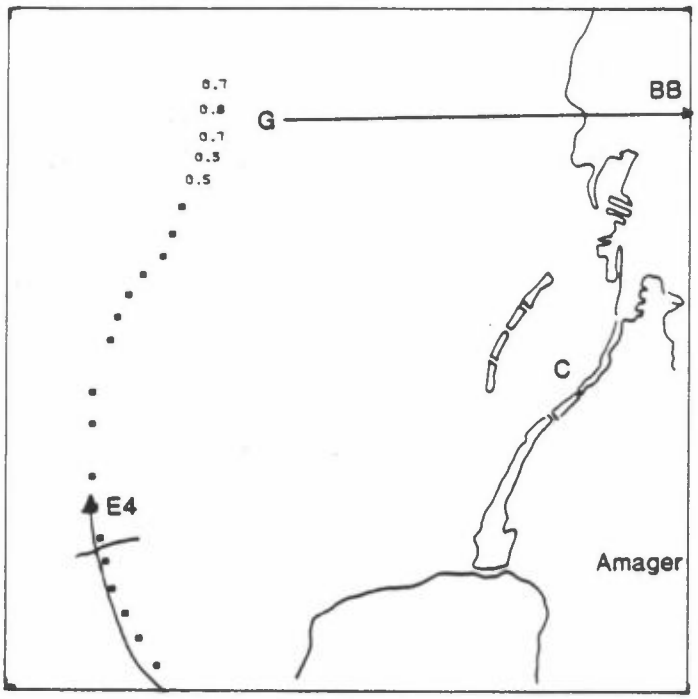
1b: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 4 June 1984, 1200-1215 CET.



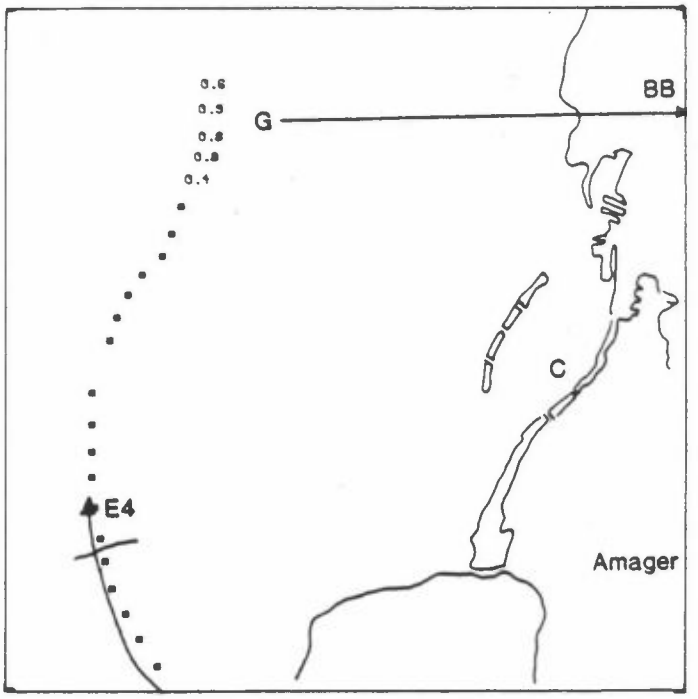
2a: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 5 June 1984, 1100-1115 CET.



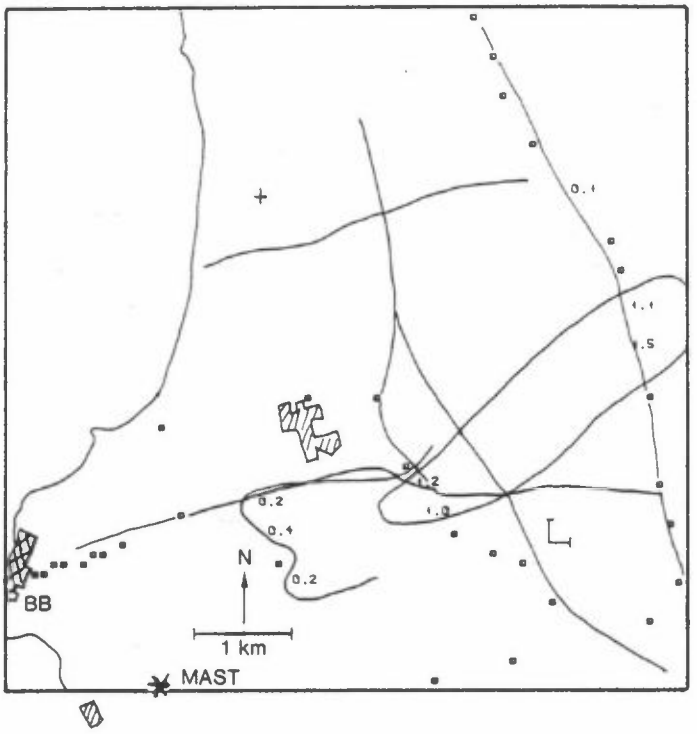
2b: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 5 June 1984, 1115-1130 CET.



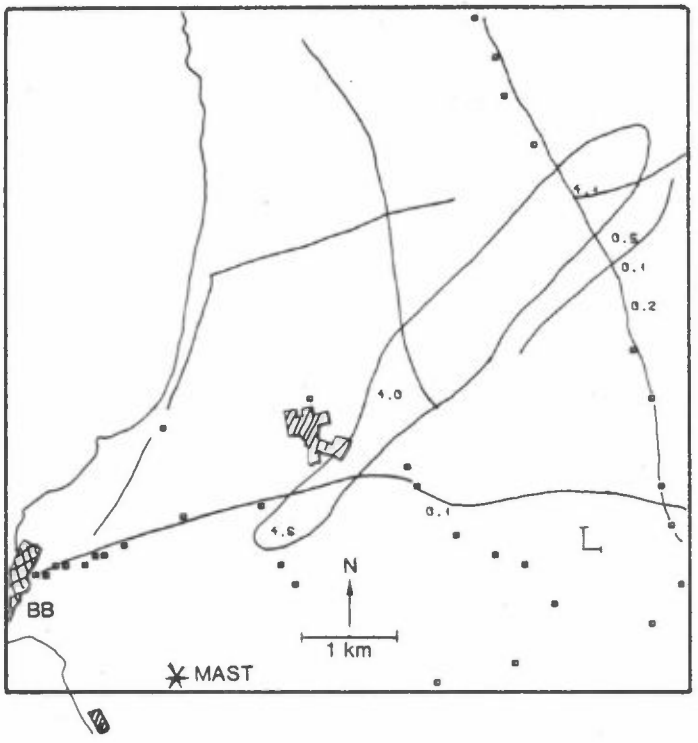
2c: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 5 June 1984, 1130-1145 CET.



2d: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 5 June 1984, 1145-1200 CET.



3a: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 9 June 1984, 1500-1515 CET.



3b: SF_6-measuring positions and measured tracer concentrations ($\mu g/m^3$) on 9 June 1984, 1515-1530 CET.

APPENDIX E

WIND AND TEMPERATURE AT BALLERUP ON 5 JUNE 1984

Ballerup

STASJON	DATE	MONTH	YEAR	TIME
13	5	6	84	1140

UPWIND DIRECTION .0 DEGREES

WIND FORCE IN METERS PER SECOND

HEIGHT	AZ	ELEV	WIND DIR	WIND FORCE	X COMP	Y COMP
107	261.8	21.3	81.8	9.1	-272.	-39.
160	260.9	21.2	79.1	9.2	-407.	-65.
215	264.5	20.2	93.0	11.6	-582.	-56.
320	268.2	19.0	94.4	11.6	-929.	-29.
376	268.6	18.6	90.6	12.5	-1117.	-27.
430	269.1	18.1	91.9	13.2	-1315.	-21.
480	268.7	17.5	86.2	13.8	-1522.	-35.
530	268.4	16.9	86.3	14.8	-1744.	-49.
645	269.5	16.3	93.6	15.4	-2206.	-19.
740	273.0	13.1	100.8	16.5	-3176.	166.
860	277.9	11.8	113.9	16.4	-4078.	566.

TEMPERATURE PROFILE

Ballerup 1984-06-05

1130 CET

Height above surface (m)	Temp. (^{0}C)
0	23.6
40	23.0
125	21.3
250	20.0
500	18.1
750	16.6
1000	16.8
1200	16.3

NORSK INSTITUTT FOR LUFTFORSKNING (NILU)
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FORFATTER(E) B. Sivertsen	TILGJENGELIGHET A
	OPPDRAGSGIVERS REF.

OPPDRAGSGIVER (NAVN OG ADRESSE)
Nordforsk
Kongensgt. 18
N-7001 Trondheim

3 STIKKORD (à maks. 20 anslag)
Spredningsforsøk | Flymålinger | Mesoskala

REFERAT (maks. 300 anslag, 7 linjer)

TITLE

ABSTRACT (max. 300 characters, 7 lines)
NILU participated in the Øresund mesoscale dispersion experiment with the research air craft and tracer technique. Data and results from the NILU measurements are presented especially the air craft turbulence and tracer data gave valuable input to the experiments.

* Kategorier: Åpen - kan bestilles fra NILU A
Må bestilles gjennom oppdragsgiver B
Kan ikke utleveres C