



Supplement of

A multi-model comparison of meteorological drivers of surface ozone over Europe

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Figure S1. Time series of daily values of MDA8 O₃ over the whole period of study (2000-2010) spatially averaged over the Balkans region.



Figure S2. Time series of daily values of MDA8 O₃ over the whole period of study (2000-2010) spatially averaged over the Scandinavian region.

			A	LN						J	AS				
EA-	0.08	0.22	0.13	0.04	0.15	0.05		0.25	0.27	0.28	0.2	0.32	0.27		
NI-	0.16	0.26	0.2	0.04	0.21	0.16		0.28	0.31	0.31	0.22	0.35	0.25		
ME-	0.18	0.28	0.17	0.11	0.23	0.14		0.28	0.31	0.33	0.24	0.3	0.28		
FR-	0.09	0.23	0.13	0.04	0.18	0.1		0.22	0.31	0.31	0.2	0.29	0.22		
EN-	0.04	0.17	0.03	0.03	0.16	0.05		0.2	0.29	0.2	0.18	0.2	0.2		
BA-	0.04	0.2	0.19	0.05	0.12	0.01		0.27	0.3	0.33	0.19	0.29	0.12		
MD-						0.07		0.18	0.21	0.26					
IP-			0.2						0.23	0.27		0.23	0.13		
SC-	0.05	0.08	0.01	0.03	0.1	0.04		0.15	0.21	0.04	0.1	0.24	0.23	_	
IN-	0.04	0.08	0.06	0.04	0.07	0.03		0.12	0.22	0.1	0.12	0.12	0.13		ľ
1			M	AM			l			٦.	AL			1 2	ľ
EA-	0.11	0.21	0.1	0.11	0.17	0.06		0.14	0.25	0.31	0.17	0.29	0.16		ľ
NI-		0.26	0.16	0.09	0.19	0.12		0.23	0.28	0.32	0.19	0.29	0.23		
ME-	0.15	0.25	0.15	0.17	0.2	0.12		0.22	0.28	0.31	0.2	0.25	0.2		
FR-	0.14	0.29	0.12	0.1	0.18	0.12		0.14	0.24	0.29	0.19	0.23	0.17		
EN-	0.09	0.21	0.05	0.11	0.14	0.08		0.11	0.22	0.16	0.1	0.17	0.13		
BA-	0.12	0.23	0.13	0.01	0.14	0.02		0.12	0.21	0.3	0.16	0.21	0.05		
MD-		0.23	0.13	0.03		0.07			0.14	0.23			0.08		
IP-		0.25	0.14		0.15			0.09	0.18	0.25		0.13			
SC-		0.17		0.08	0.12	0.05		0.08	0.13	0.03	0.05	0.18	0.09		
IN-	0.05	0.12	0.01	0.04	0.1	0.06		0.04	0.14	0.05	0.05	0.06	0.05		
	MATCH	- INNIM	CHIMERE.	EMEP	LOTOS	OBS		MATCH	INNIM	CHIMERE	EMEP	LOTOS -	OBS		

Figure S3. Values of relative importance (contribution to the total explained variance) of maximum temperature in the seasons AMJ, JAS and MAM and JJA.

			AI	LN						١	4S				
EA-	0.153	0.04	0.102	0.033	0.014	0.258		0.196	0.074	0.121	0.138		0.197		
NI-		0.027	0.07	0.006	0.042	0.209	-		0.059	0.086	0.061		0.147		
ME-	0.077	0.023	0.069	0.01	0.014	0.236				0.076	0.033	0.055	0.199		
FR-	0.032	0.01	0.047	0.005	0.011	0.201		0.047		0.061	0.058	0.025	0.166		
EN-	0.027	0.021	0.065	0.01	0.007	0.196		0.018	0.01	0.019	0.006	0.005	0.154		
BA-	0.097	0.034	0.091	0.022	0.051	0.019		0.095	0.071	0.11	0.105	0.049	0.029		
MD-			0.017	0.011	0.006	0.091		0.002		0.002	0.005		0.045		
IP-	0.113		0.092	0.013		0.145			0.081	0.1	0.117	0.068	0.109		
SC-		0.004	0.014	0.029		0.126			0.001		0.011	0.009	0.076	Ι.	
IN-	0.006		0.021			0.106		0.015		0.013			0.051		
1			M	AM			l			J.	JA			i	
EA-	0.181	0.091	0.156	0.053	0.019	0.225		0.152	0.045	0.131	0.152		0.206		
NI-		0.027	0.084			0.163		0.091	0.033	0.086	0.058		0.173		
ME-	0.091	0.051	0.114	0.045	0.019	0.205		0.094		0.079	0.025	0.032	0.179		
FR-	0.03	0.013	0.049	0.013		0.119		0.041		0.067	0.051	0.023	0.168		
EN-	0.046	0.018	0.095	0.008	0.011	0.129		0.021	0.015	0.02	0.01	0.004	0.166		
BA-	0.114	0.023	0.096	0.003	0.006	0.019		0.109	0.051	0.121	0.136	0.075	0.012		
MD-	0.005	0.009	0.02		0.008	0.052				0.009	0.014		0.064		
IP-	0.069				0.041	0.091		0.079	0.054	0.101	0.13		0.101		
sc-	0.07	0.033	0.092	0.012	0.007	0.182		0.033		0.006	0.007	0.01	0.126		
IN-	0.011	0.022	0.046	0.009		0.082		0.01		0.007	0.045		0.061		
	MATCH	INNIM	HIMERE	EMEP-	LOTOS -	OBS		MATCH-	INNIM	HIMERE	EMEP -	LOTOS	OBS		

Figure S4. Values of relative importance (contribution to the total explained variance) of relative humidity in the seasons AMJ, JAS and MAM and JJA.



- 0.3 0.2 0.1

Figure S5. Standard deviations of the meteorological predictors: Maximum temperature (Tx), relative humidity (RH), solar radiation (SSRD), wind direction (Wdir) and wind speed-10m (W10m). Standard deviations are computed for each season, AMJ (top) and JAS (bottom), and for each region: England (EN), France (FR), Mid-EU (ME), NI (North Italy), EA (East-EU), IN (Inflow), SC (Scandinavia), IP (Iberian Peninsula), MD (Mediterranean) and Balkans (BA).



Figure S6. Correlation coefficients between MDA8 O3 and each potential predictor used in the MLR. Correlations are computed for each season, AMJ (top) and JAS (bottom), and for internal regions: England (EN), France (FR), Mid-EU (ME), NI (North Italy), EA (East-EU).



Figure S7. Correlation coefficients between MDA8 O3 and each potential predictor used in the MLR. Correlations are computed for each season, AMJ (top) and JAS (bottom), and for external regions: IN (Inflow), SC (Scandinavia), IP (Iberian Peninsula), MD (Mediterranean) and Balkans (BA).



Figure S8. Standardised coefficients values of the rest of the meteorological predictors (SSRD, Wdir and W10m) for each CTM-based and observation-based MLR in AMJ (top) and JAS (bottom) and for the internal regions: England (EN), France (FR), Mid-Europe (ME), North Italy (NI) and East-Europe (EA).



Figure S9. Standardised coefficients values of the rest of the meteorological predictors (SSRD, Wdir and W10m) for each CTM-based and observation-based MLR in AMJ (top) and JAS (bottom) and for the external regions: Inflow (IN), Iberian Peninsula (IP), Scandinavia (SC), Mediterranean (MD) and Balkans (BA).