

Process	Option/dataset	Remarks
Land surface model	Noah LSM	CORINE land use data
Urban processes	single-layer UCM	three categories: roofs, walls, trees
Boundary layer	MYNN	
Cumulus convection	Grell–Freitas	switched on for both domains
Cloud microphysics	Morrison double-moment	
Radiation (sw+lw)	RRTMG	
Aerosols	MADE/SORGAM	chem_opt=106
Chemistry	RADM2	with KPP
Photolysis	Madronich F-TUV	
Anthropogenic emissions	TNO-MACC III	see Sect. 2.4 for details
Biogenic emissions	online	MEGAN
Dust and sea salt emissions	online	dust_opt=3, seas_opt=2
Meteorological boundary conditions	ERA-Interim	sst_update=1
Chemical boundary conditions	MOZART4-GEOS5	