

Region	Beijing–Tianjin–Hebei (BTH)
Simulation period	9 to 25 January 2014
Domain size	150 × 150
Domain center	39° N, 117° E
Horizontal resolution	6 km × 6km
Vertical resolution	35 vertical levels with a stretched vertical grid with spacing ranging from 30 m near the surface to 500 m at 2.5 km and 1 km above 14 km
Microphysics scheme	WRF Single-Moment six-class graupel scheme (Hong and Lim, 2006)
Boundary layer scheme	Mellor–Yamada–Janjić turbulent kinetic energy scheme (Janjić, 2002)
Surface layer scheme	MYJ surface scheme (Janjić, 2002)
Land-surface scheme	Unified Noah land-surface model (Chen and Dudhia, 2001)
Longwave radiation scheme	Goddard longwave scheme (Chou and Suarez, 2001)
Shortwave radiation scheme	Goddard shortwave scheme (Chou and Suarez, 1999)
Meteorological boundary and initial conditions	NCEP 1° × 1° reanalysis data
Chemical initial and boundary conditions	MOZART 6 h output (Horowitz et al., 2003)
Anthropogenic emission inventory	Developed by Zhang et al. (2009) and Li et al. (2017)
Biogenic emission inventory	MEGAN model developed by Guenther et al. (2006)