

Table 1: Experimental details of the atmosphere model, WRF-only and WRF-H

Subject	Option	Reference
Driving data	Operational analysis	ECMWF
Horizontal resolution	5 km	
Horizontal grid	400×400	
Integration time step	30 s	
Projection resolution	Mercator	
Vertical discretization	50 layers	
Output interval	24h for WRF, 30 days for WRF/WRF-Hydro	
Simulation period	1 st January 2008 – 31 st December 2010	
Pressure top	10 hPa	
Microphysics scheme	Single Moment 5, WSM5	Hong, Dudhia, & Chen, 2004
Longwave radiation	Rapid Radiative Transfer Model (RRTM)	Mlawer et al., 1997
Shortwave radiation	Dudhia	Dudhia, 1989
Planetary boundary layer	Asymmetric Convection Model (ACM2)	Pleim, 2007
Land use	MODIS	Friedl et al., 2002
Land surface scheme	Noah LSM	Chen, Fei ; Dudhia, 2001