Simulation	Description	Simulation period
RefBase	Reference run with uniform reaction probabilities for IEPOX and isoprene glyoxal $\gamma_{\mathrm{IEPOX}} = 1.0 \times 10^{-3}$, $\gamma_{\mathrm{IGYOXAL}} = 2.9 \times 10^{-3}$ (see Sect. 2.1.1), partitioning precursor ΔH_{vap} and p_0^* (298.15 K) given in Table 1	Whole year 2012
RefVBS	ECHAM–HAM simulation with VBS approach and pseudo-chemistry (see Sect. 2.1.2)	June, July, August 2012
ΔH_{30}	Like RefBase, but with same $\Delta H_{\mathrm{vap}} = 30\,\mathrm{kJ\,mol^{-1}}$ for all compounds	June, July, August 2012
EVA	Like RefBase, but with ΔH_{vap} and p_0^* derived with EVAPORATION (Compernolle et al., 2011) instead of Nannoolal et al. (2008) method	Whole year 2012
γpH	Like RefBase, but with $\gamma_{\mathrm{IEPOX}} = f(\mathrm{pH})$	June, July, August 2012
HshiftIEP	Additional reaction in JAM3 (Reaction R24)	June, July, August 2012
HshiftLC5	Additional reaction in JAM3 (Reaction R25)	June, July, August 2012
DECAY	LISOPOOHOOH in-particle decay	June, July, August 2012
JPHOT	SOA photolysis with $J_{\mathrm{SOA}} = 0.004\,\% \; J_{\mathrm{NO_2}}$	June, July, August 2012