Model	Description
GPS tracking data (30 h)	Undifferenced ionosphere-free code and phase
GPS ephemeris	CODE final GPS orbits and 5 s clocks
GPS phase model	igs08.atx (week 1888) (Schmid et al., 2007)
Swarm attitude	Quaternion from star camera (Level 1b)
Swarm phase model	Phase center offset (Level 1b) phase center variations map (van den IJssel et al., 2016)
Stochastic model	$\sin(\text{Elev})/(\sigma_c)^2$ or $\sin^2(\text{Elev})/(\sigma_c)^2$, $1/(\sigma_p)^2$
A priori coordinates	Medium Accurate Orbit Determination MOD (Level 1b)
Elevation cut-off angle	$2°$
Ionospheric delay	Ionosphere-free linear combination
Phase wind-up	Model (Wu et al., 1993)
Relativistic corrections	Model (IS-GPS-200H, 2013) Shapiro effect (Hofmann-Wellenhof et al., 2008)