

Integrator

De Wiki

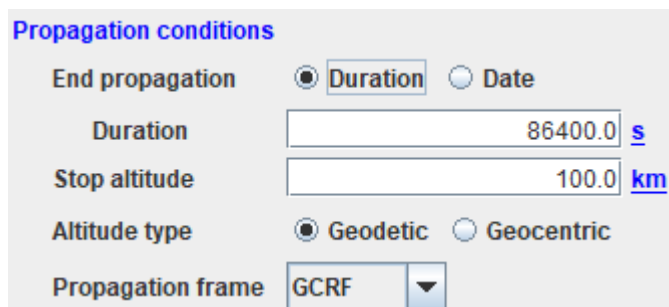
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In this tab we have to kind of information:

Propagation data

First, data linked to the propagation with:

- Duration or date criteria for the end of the propagation
- Value of the duration or the date of the end of the propagation
- Altitude of the end of the propagation
- Type of altitude (since V11.4)



Propagation conditions

End propagation Duration Date

Duration [s](#)

Stop altitude [km](#)

Altitude type Geodetic Geocentric

Propagation frame ▼

Note: the propagation will stop once the first event (date or altitude) will occur.

Note: it is possible to retro propagate a trajectory by giving a negative duration or a date previous to the initial one.

- Frame used for the propagation (only inertial ones among **CIRF**, **EME2000** and **GCRF**); the first one is recommended in term of **CPU** time.

Numerical integrator

Then, we will have numerical integrator tuning:

- If the user chooses a **Runge Kutta**, only the step will have to be entered
- If the **Dormand Price** is selected the user will have to tune min/max steps and tolerances (but by default values are available).

Integrator parameters

Type: Dormand-Prince (8th order) Runge-Kutta (4th order) Runge-Kutta (6th order)

Minimum timestep: s

Maximum timestep: s

Tolerances definition: Complete Reduced Simplified

Bypass error on min Timestep Templates for tolerances definition ▼

Absolute Tolerance			Relative Tolerance		
X	*	<input type="text" value="7.0E-7"/> m	Xr	<input type="text" value="0.0E0"/> %	
Y	*	<input type="text" value="7.0E-7"/> m	Yr	<input type="text" value="0.0E0"/> %	
Z	*	<input type="text" value="7.0E-7"/> m	Zr	<input type="text" value="0.0E0"/> %	
Vx	*	<input type="text" value="3.0E-11"/> m/s	Vxr	<input type="text" value="0.0E0"/> %	
Vy	*	<input type="text" value="3.0E-11"/> m/s	Vyr	<input type="text" value="0.0E0"/> %	
Vz	*	<input type="text" value="3.0E-11"/> m/s	Vzr	<input type="text" value="0.0E0"/> %	
Mass		<input type="text" value="1.0E-3"/> kg	Massr	<input type="text" value="1.0E-2"/> %	

Note: since V11.4 and due to the V4.4 version of [PATRIUS](#) a specific option is available to by-pass the error mode when minimum step is reached. In that case, the precision given by tolerances will not be reached but the propagation will go on.

Note: since V11.4 some typical tuning is proposed depending on the kind of orbit and the desired precision.

Récupérée de « <http://psimu.cnes.fr/index.php?title=Integrator&oldid=783> »

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