

Maneuvers

De Wiki

Aller à : [navigation](#), [rechercher](#)
[Maneuvers](#)

This tab deals with maneuvers definition. Of course, by default, no maneuvers are defined.

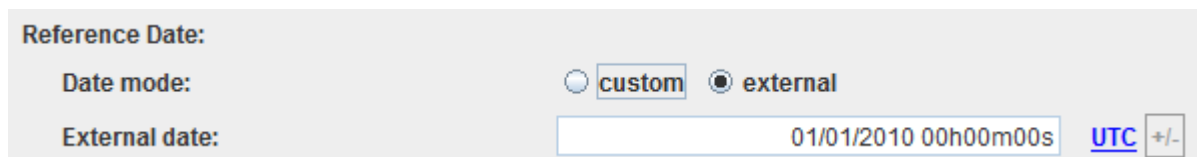
Sommaire

- [1 Reference date](#)
- [2 List of maneuvers](#)
 - [2.1 Impulsive maneuver](#)
 - [2.2 Constant thrust maneuver](#)

Reference date

First, the user will have to select a reference date, useful if the maneuvers will be later defined thanks to a duration relative to this date. There are two possibilities:

- “**custom**” : a specific date will be entered by the user
- “**external**” : in that case no modification of the date is available as it corresponds to the date defined in the initial orbit parameters (note that this date is automatically updated if the initial orbit date is modified).



The screenshot shows a configuration panel titled "Reference Date:". It contains two rows. The first row is labeled "Date mode:" and has two radio button options: "custom" (which is unselected) and "external" (which is selected). The second row is labeled "External date:" and features a text input field containing the value "01/01/2010 00h00m00s". To the right of the input field is a blue "UTC" label and a small box with "+/-" for time zone adjustment.

List of maneuvers

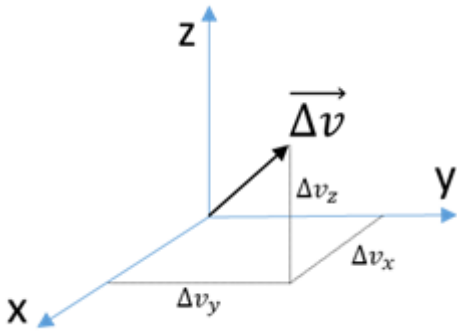
Then the user will have access to a list of maneuvers with all possibilities available with such lists (**adding, removing, moving, duplicating** ...). Each maneuver may be an impulsive or a continuous constant thrust one.

Impulsive maneuver

The user will have to define:

- The name of the maneuver
- Since V11.4, the type of maneuver (standard or by orbital increment)
 - if standard type is chosen, we will have to give:
 - The frame in which the maneuver is defined
 - The maneuver components (Cartesian coordinates or a norm and two angles)
 - if it is by orbital increments:
 - on semi-major axis
 - on eccentricity (and semi-major axis eventually)

- on inclination (and semi-major axis eventually)



The components and the angles are related by: [math] \begin{cases} \Delta v_x = \|\overrightarrow{\Delta v}\| \cos\beta \cos(\alpha) \\ \Delta v_y = \|\overrightarrow{\Delta v}\| \cos\beta \sin(\alpha) \\ \Delta v_z = \|\overrightarrow{\Delta v}\| \sin(\beta) \end{cases} [/math] where $\alpha \in [0, 2\pi]$ and $\beta \in [-\pi/2, \pi/2]$

- The orbital event that will trigger the maneuver (*be careful that the orbital event is not indefinite as AOL when inclination is equal to zero*)
- The engine used taken in the list defined in the vehicle characteristics tab
- The tank used taken in the list defined in the vehicle characteristics tab

Maneuver1

Maneuver *

Maneuver Type Impulsive ▼

Name *

Impulse maneuver

Type Standard ▼

Frame type * Local Orbital Frame Inertial Frame

Inertial * EME2000 ▼

Delta V *

Type of coordinates: Custom - Angular coordinates ▼

Alpha (around Z): [deg](#)

Beta (above XY plane): [deg](#)

Norm: * [m/s](#)

X Component: [m/s](#)

Y Component: [m/s](#)

Z Component: [m/s](#)

Maneuver Start event *

Type Relative date ▼

Display event config

Relative Date Detector *

Relative date: * [s](#)

Display expert config

Engine * Engine1 ▼

Fuel Tank * Fuel Tank1 ▼

Constant thrust maneuver

The user will have to define:

- The name of the maneuver
- The frame in which the maneuver is defined
- The maneuver direction (Cartesian coordinates or two angles)
- The orbital event that will trigger the maneuver (*as for impulsive maneuver, be careful that the orbital event is not indefinite as AOL when inclination is equal to zero*)
- The criteria to end the maneuver (by duration or thanks to another orbital event).
- The engine used taken in the list defined in the vehicle characteristics tab
- The tank used taken in the list defined in the vehicle characteristics tab

Maneuver2

Maneuver Type * Continuous ▼

Name * Maneuver2

Constant maneuver

Frame type Local Orbital Frame Inertial Frame

LOF LVLH ▼

Acceleration direction *

Type of coordinates: Custom - Angular coordinates ▼

X Component: -1.0

Y Component: 1.22464679914735E-16

Z Component: 0.0

Alpha (around Z): * 180.0 deg

Beta (above XY plane): 0.0 deg

Maneuver Start event * AOL ▼

Display event config

AOL Detector *

AOL: * 180.0 deg

Type: * true ▼

Frame: * GCRF ▼

Start at occurrence: * 1

Display expert config

Stop maneuver: * duration event

Maneuver End event DATE ▼

Display event config

Date Detector

Date: 01/01/2000 00h00m00s UTC +/-

Display expert config

Engine * Engine1 ▼

Fuel Tank * Fuel Tank1 ▼

Récupérée de « <http://psimu.cnes.fr/index.php?title=Maneuvers&oldid=771> »

Menu de navigation

Outils personnels

- 18.216.186.244
- [Discussion avec cette adresse IP](#)

- [Créer un compte](#)
- [Se connecter](#)

Espaces de noms

- [Page](#)
- [Discussion](#)

Variantes

Affichages

- [Lire](#)
- [Voir le texte source](#)
- [Historique](#)
- [Exporter en PDF](#)

Plus

Rechercher

PSIMU

- [Welcome](#)
- [Quick start](#)
- [News](#)

GUI Mode

- [Overall presentation](#)
- [Initial Orbit](#)
- [Earth features](#)
- [Vehicle](#)
- [Forces](#)
- [Maneuvers](#)
- [Attitude](#)
- [Integrator](#)
- [Events](#)
- [Output](#)
- [Console](#)

Batch mode

- [How to call it](#)

Java interface

- [Basic principle](#)
- [Data initialization](#)
- [Propagation](#)
- [Printing results](#)
- [Customize output variables](#)

Evolutions

- [Main differences between V11.7.3 and V11.7.4](#)
- [Main differences between V11.7.2 and V11.7.3](#)
- [Main differences between V11.7.1 and V11.7.2](#)
- [Main differences between V11.6.2 and V11.7.1](#)
- [Main differences between V11.5 and V11.6.2](#)
- [Main differences between V11.4.1 and V11.5](#)
- [Main differences between V11.4 and V11.4.1](#)
- [Main differences between V11.3 and V11.4](#)
- [Main differences between V11.2 and V11.3](#)
- [Main differences between V11.1 and V11.2](#)
- [Main differences between V11.0 and V11.1](#)

Training

- [Tutorials package for V11.7.x](#)
- [Tutorials package for V11.6](#)
- [Tutorials package for V11.5](#)
- [Tutorials package for V11.4](#)
- [Tutorials package for V11.3](#)
- [Tutorials package for V11.2](#)
- [Tutorials package for V11.0](#)

Links

- [CNES freeware server](#)

Outils

- [Pages liées](#)
- [Suivi des pages liées](#)
- [Pages spéciales](#)
- [Adresse de cette version](#)

- [Information sur la page](#)
- [Citer cette page](#)

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- [Politique de confidentialité](#)
- [À propos de Wiki](#)
- [Avertissements](#)

