

# Tutorials 4.0 Orbits

De Wiki

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

[User Manual 4.13 Rotations and quaternions](#) > [Spécial:Journal](#) > [Spécial:ExportRDF/Tutorials 4.0 Ephemeris](#) > [Tutorials 4.0 Maneuvers](#) > [Tutorials 4.0 Orbits](#)

## What is an orbit ?

An orbit is defined with a **date**, a **frame** then **orbital parameters**; in the example below, we will use keplerian parameters ...

- semi major axis
- eccentricity
- inclination
- perigee argument
- right ascension of the ascending node
- anomaly (mean, true, eccentric)

Note that it is mandatory to set the "Mu" value (gravitational constant) for both reasons :

1. to be able to convert keplerian parameters to cartesian ones
2. to propagate this orbit using the keplerian motion (considering only the central term) (for more sophisticated propagations (analytical or numerical ones) see specific tutorials).

**Code example:** [create a Keplerian orbit](#)

## Orbital parameters

Rather than to set directly orbital parameters when creating an orbit (see previous tutorial), it is possible to go through an intermediate object including these orbital parameters.

Then to create an orbit, we will have to set the **date**, the **frame** ... and this object.

Moreover, the advantage of this sublevel is to treat parameters conversions without considering a whole orbit (for example, to convert **keplerian** parameters in **cartesian** ones, it is not necessary to use a **date** or a **frame**).

**Code example:** [create a Keplerian orbit using parameters](#)

## Orbital parameters conversions

As explained in the previous tutorial, it is possible to make a lot of conversion between different orbital parameters formats. The following code gives some examples ...

**Code example:** [orbital parameters conversions](#)

Récupérée de « [http://patrius.cnes.fr/index.php?title=Tutorials\\_4.0\\_Orbits&oldid=1560](http://patrius.cnes.fr/index.php?title=Tutorials_4.0_Orbits&oldid=1560) »  
[Catégorie](#) :

- [Tutorials 4.0](#)

# Menu de navigation

## Outils personnels

- [3.16.147.139](#)
- [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

## PATRIUS

- [Welcome](#)

## Evolutions

- [Main differences between V4.13 and V4.12](#)
- [Main differences between V4.12 and V4.11](#)
- [Main differences between V4.11 and V4.10](#)
- [Main differences between V4.10 and V4.9](#)
- [Main differences between V4.9 and V4.8](#)
- [Main differences between V4.8 and V4.7](#)

- [Main differences between V4.7 and V4.6.1](#)
- [Main differences between V4.6.1 and V4.5.1](#)
- [Main differences between V4.5.1 and V4.4](#)
- [Main differences between V4.4 and V4.3](#)
- [Main differences between V4.3 and V4.2](#)
- [Main differences between V4.2 and V4.1.1](#)
- [Main differences between V4.1.1 and V4.1](#)
- [Main differences between V4.1 and V4.0](#)
- [Main differences between V4.0 and V3.4.1](#)

## **User Manual**

- [User Manual 4.13](#)
- [User Manual 4.12](#)
- [User Manual 4.11](#)
- [User Manual 4.10](#)
- [User Manual 4.9](#)
- [User Manual 4.8](#)
- [User Manual 4.7](#)
- [User Manual 4.6.1](#)
- [User Manual 4.5.1](#)
- [User Manual 4.4](#)
- [User Manual 4.3](#)
- [User Manual 4.2](#)
- [User Manual 4.1](#)
- [User Manual 4.0](#)
- [User Manual 3.4.1](#)
- [User Manual 3.3](#)

## **Tutorials**

- [Tutorials 4.5.1](#)
- [Tutorials 4.4](#)
- [Tutorials 4.1](#)
- [Tutorials 4.0](#)

## **Links**

- [CNES freeware server](#)

## **Navigation**

- [Accueil](#)
- [Modifications récentes](#)
- [Page au hasard](#)
- [Aide](#)

## Outils

- [Pages liées](#)
- [Suivi des pages liées](#)
- [Pages spéciales](#)
- [Adresse de cette version](#)
- [Information sur la page](#)
- [Citer cette page](#)
  
- Dernière modification de cette page le 27 mars 2018 à 14:03.
  
- [Politique de confidentialité](#)
- [À propos de Wiki](#)
- [Avertissements](#)
  
- 