

# Main differences between V4.0 and V3.4.1

De Patrius

[Aller à la navigation](#) [Aller à la recherche](#)

La version imprimable n'est plus prise en charge et peut comporter des erreurs de génération. Veuillez mettre à jour les signets de votre navigateur et utiliser à la place la fonction d'impression par défaut de celui-ci.

**PATRIUS** V4.0 is a major release and has a simplified architecture: its former dependencies (**Commons-Math**, **OREKIT** and the addons) have been merged into a single standalone library (*patrius\_V4.0.jar*). Users only need to download one library for compilation purpose. To help migrate sources based on **PATRIUS** 3.x, a script is available (search & replace all the import) and make it quite easy to update to **PATRIUS** 4.0. The script will transform all Java files found under the current directory.

□

## Sommaire

- [1 Java 7 compatibility](#)
- [2 Constant/continuous maneuvers](#)
- [3 Bug fixes](#)
- [4 API incompatibilities](#)
- [5 Regressions](#)

## Java 7 compatibility

**PATRIUS** is now a **Java 7** project : all users need a **JRE** (or **JDK 7**) (or higher).

## Constant/continuous maneuvers

[ConstantThrustManeuver](#) & [VariableThrustManeuver](#) have been merged in [ContinuousThrustManeuver](#). Constructors use [PropulsiveProperty](#) object to set all parameters. Besides, the behavior and the numerical results are the same as before.

## Bug fixes

- [AtmosphereData](#) uses molar mass in kg/mol (and not in g/mol). [GlobalAeroModel](#) results are affected.
- [Assembly](#) can now correctly handle mobile parts
- [\[STELA\]](#) propagator can use osculating parameters for its initial orbit.
- Some optimizations in:
  - [AbsoluteDate](#): around 5% gain in a lot of algorithms
  - [HelmholtzPolynomial](#)
  - **GTOD** frame : a big computation time issue has been fixed. All the frames of this branch now have the same performances as the **IERS** one.
- Normalized Earth potential coefficients can be used for order & degrees above **86** (numerical quality bug fix)

## API incompatibilities

- [EarthGravitationalModelFactory](#) methods need a new parameter to allow missing coefficients.
- [FramesConfigurationBuilder](#): the new method [setEOP2000History\(\)](#) replaces [setEOPHistory\(\)](#)
- [TOD](#), [VEIS](#), [ITRF](#) equinox based frames now need to be configured with [EOP](#) History, through a [FramesConfiguration](#)

## Regressions

- [GlobalAeroModel](#): some regression (about 10 cm after a 6h [LEO](#) propagation)
- Use of [MultiNumericalPropagator](#) & [Assembly](#): small regression have been observed ( $\sim 1e^{-14}$ m)
- [CnCookModel](#) and [CtCookModel](#): theses models have been fixed (former results were wrong)
- [ContinuousThrustManeuver](#): some numerical regression (ie :  $1e^{-7}$ m in position) can be observed while propagating through a maneuver
- Earth potential : for high order/degree, there are some numerical regression ( $1e^{-7}$ m after 24h numerical propagation of [LEO](#) orbit) but a better precision (see § bug fixes).

[Return to the introduction](#) ↑

Récupérée de

« [http://patrius.cnes.fr/index.php?title=Main\\_differences\\_between\\_V4.0\\_and\\_V3.4.1&oldid=10](http://patrius.cnes.fr/index.php?title=Main_differences_between_V4.0_and_V3.4.1&oldid=10) »

## Menu de navigation

### Outils personnels

- [Se connecter](#)

### Espaces de noms

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

français

### Affichages

- [Lire](#)
- [Voir le texte source](#)
- [Voir l'historique](#)
- [Exporter en PDF](#)

Plus

## Rechercher

Rechercher

Lire

## PATRIUS

- [Welcome](#)

## Evolutions

- [Main differences between V4.15 and V4.14](#)
- [Main differences between V4.14 and V4.13](#)
- [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 4.15](#)
- [User Manual 4.14](#)
- [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 4.15](#)
- [Tutorials 4.14](#)
- [Tutorials 4.13.5](#)
- [Tutorials 4.12.1](#)
- [Tutorials 4.8.1](#)
- [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](#)
- [Lien permanent](#)
- [Informations sur la page](#)
- [Parcourir les propriétés](#)
- [Citer cette page](#)

- La dernière modification de cette page a été faite le 13 février 2018 à 08:09.
- Cette page a été consultée 134 fois.

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

