

# Main differences between V4.1 and V4.0

De Wiki

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## New functionalities

- New methods for Cartesian/Spherical transformation Jacobian matrixes computation
- New **RK6** interpolator (more precise one as its order is 2; error in position is about some centimeters on a **LEO** orbit rather than few hundreds of meters as previously).
- New class to collect environment models data ([ForceModelsData](#) class).
- Access to potential coefficients.
- Rediffused **SRP** modified when reduction of the amount of sources (see JavaDoc).
- Glint position vector available ([GlintApproximatePointingDirection](#) class).
- Adding several classes and methods (as getters or clone/copy) from [GENOPUS](#).
- New [IntervalleOccurrenceDetector](#) class

## Bugs fixes

- Correction when using **Eckstein-Hechler** propagator constructor with an attitude law.
- Matrixes multiplications in the [CovarianceUtils](#) class are now well coded.
- [TankProperty](#) and [PropulsiveProperty](#) did not need the name of the part in the constructor.
- [IsisSunPointing](#) class: in the [getAttitude\(\)](#) method, the xSun vector is normalized.
- Performance problems for multithreading due to a bad use of synchronization.
- Correction of the [getDate\(\)](#) method in the [GalileoAlmanacParameters](#) class, considering **GST** epoch as 1999/08/22 0h0mn0s **UTC**.
- Correction of the equivalent maximal inertia in the [AbstractIsisSpinBiasSlew](#) class taking into account all the wheels.
- Anomaly when reading some **TLE**.
- Useless computations in the [Rotation](#) class constructor.
- Improvement of the [HelmholtzPolynomial.computeHelmholtzPolynomial\(\)](#) method: Balmino model is 30% more rapid.
- SI value for hydrogen mass
- Error messages for [MultiNumericalPropagator](#) and [NumericalPropagator](#) classes have been modified.

## API incompatibilities

- [TankProperty](#) and [PropulsiveProperty](#) constructors.

# Régressions

- When using **RK6** integrator.

Récupérée de

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