

Accueil

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WHY PATRIUS?

PATRIUS is a core space dynamics **Java** library that enables to quickly develop high level algorithms such as orbit extrapolator. **PATRIUS** contains several low level classes (i.e.: such as matrix, vectors, orbits parameters) as well as high level classes and interfaces (i.e.: numerical propagators, attitude laws, manoeuvres sequences).

MAIN ADVANTAGES

All the main domains of space dynamics are available:

- Analysis, algebra & geometry (quaternions, derivable functions, integrators ...)
- Core objects for space dynamics (dates, orbits, frames...)
- Orbit propagation: analytical, semi-analytical and numerical propagators, a full set of force models
- Maneuvers: impulsive or continuous thrust, sequences
- Attitude: extensible set of attitude laws, sequences and guidance framework
- Events: event detection (orbital, sensor events, etc.) and post-processing (chronograms)
- Spacecraft: characteristics of mass, geometry (drag force), sensors field of view, etc.

PATRIUS got a deep validation by comparison with precise orbitography tools. Moreover, it is now fully used by CNES tools, in particular for operational flight dynamics subsystem (**FDS**). For that reason the criticity level is “C”.

Furthermore, **PATRIUS** design relies on extensible **Java** interfaces and robust design patterns.

REMARKS

A data package ([PATRIUS_DATASET](#)) is also provided in addition allowing access to some data models.

Tutorials are available in specific tutorials pages.

CURRENT VERSION: 4.13

PATRIUS V4.13 is a release adding a few features as well as correcting some bugs (see [here](#)).

PREVIOUS VERSIONS (available on the Web site)

- Version 4.12

- Version 4.11
- Version 4.10
- Version 4.9
- Version 4.8
- Version 4.7
- Version 4.6.1
- Version 4.5.1
- Version 4.4
- Version 4.3
- Version 4.2
- Version 4.1.1
- Version 4.1
- Version 4.0
- Version 3.4.1
- Version 3.3
- Version 3.2

DEPENDENCIES

Version	4.13	4.12	4.11	4.10	4.9	4.8	4.7	4.6.1	4.5.1	4.4	4.3	4.2	4.1.1	4.0	3.x
Disponibility	from 19/12/2023	from 19/12/2023	from 23/05/2023	from 03/11/2022	from 30/05/2022	from 20/10/2021	from 04/06/2021	from 02/04/2021	from 13/08/2020	from 30/10/2019	from 15/06/2019	from 17/01/2019	from 16/10/2018	from 22/01/2018	-
Javadoc	yes	yes													
Dependencies	Java 1.8	Java 1.7	Java 1.7	Java 1.6	Java 1.6										

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