

Minisymposium Title

Computational Astrodynamics

Description

The main research area of Astrodynamics is the movement of rockets, missiles and spacecraft under Newton's law of motion as well as the gravity law. Astrodynamics is mainly concerned with the trajectory of various spacecraft from launch to orbit insertion and return to the atmosphere, as well as orbit transfer and interstellar flight.

Astrodynamics is based on celestial mechanics. After the first satellite Sputnik-1 launch in 1957, many new elements, rocket propulsion, aerodynamics, satellite attitude dynamics and others being added, astrodynamics becomes a comprehensive discipline subject.

With the complexity of astrodynamics problems, numerical calculations also play an important role in astrodynamics. Currently, the research area of computational astrodynamics covers a wide range, including, but not limited to, in the following topics.

- Optimal launch vehicle trajectory
- Low thrust space mission trajectory design
- Satellite / Rocket Multi-body dynamics
- Multi-body problems
- Space Navigation

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