



AEROSPACE

In-line Damper for Space Application

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What we are looking for

We are looking for a suitable partner to enter into license deal/co-development partnership

What it is needed for?

The In-Line Damper aims to provide energy dissipation from a tether, to reduce oscillations and improve dynamical stability, particularly for a conductive tape/tether for space applications. The mechanism also provides electrical continuity between the incoming conductive tape and the outgoing portion that can have a different configuration. The mechanism is designed to be easily scaled to several operative configurations in terms of user environment, mass, length and shape of the tether both for the portions of the tether in and out of the mechanism.

The device is intended for use on satellites and in particular in deorbiting devices for satellites in low earth orbits (LEO). These devices are based on electrodynamic cables or tapes that provide by interaction with the magnetic field an opposing Lorentz (electrodynamic) force on motion to lower the orbital height until atmospheric reentry in compliance with the guidelines for mitigation of human-produced orbital debris.

The proposed structure allows for a very small size and weight while providing the required functionality.

Advantages

- Wire/tape vibration damping;
- Electrical continuity;
- High overall stiffness;
- Ability to operate over a wide thermal range;
- Simple to manufacture;
- Reliability provided by few moving elements.

Applications

- LEO satellites deorbiting;
- Space debris removal.

