INTERNATIONAL SPACE SCIENCE INSTITUTE

Satellite Drag Effects on Satellite Operations and Debris in Low Earth Orbit

Online Seminar with**Eelco Doornbos**(Royal Netherlands Meteorological Institute (KNMI), NL)

Today, 19th January 2023 | 17h CET | 11h EST

Please click on this Link for the Zoom Session >>

Satellites in low Earth orbit travel through the uppermost layer of the neutral atmosphere, where their movement is affected by variations in the density and wind. These variations affect the amount of fuel required by active satellites to fulfil their mission, as well as the duration that debris objects remain in space. The number of objects in low Earth orbit has been rapidly increasing. With it, concerns over the long-term sustainability of the use of this region of space have been on the rise as well. The trend in the number of objects is due to the ever increasing relevance of satellite missions to our society, combined with technological developments such as miniaturisation and the rise of mega-constellations. But also in-orbit breakups of rocket stages and satellites have been major contributors. In this talk, the speaker will provide an overview of the physics and technology related to this topic, as well as the ways in which international collaboration will be essential to provide solutions.

Eelco Doornbos is a space weather scientist at KNMI, the Royal Netherlands Meteorological Institute. He started his career as a researcher at the Delft University of Technology, working on the modelling of satellite drag, applied in the precise orbit determination of oceanography satellites. For his PhD, he contributed to algorithms for creating data products on the density and wind in the upper atmosphere from measurements of the motion of satellites. This experience resulted in lead roles in thermosphere data processing projects for the ESA Earth Observation missions GOCE and Swarm. During the same period he also taught MSc level courses in orbital mechanics. In 2019, he moved to KNMI, where he is now working on space weather hazards in a much wider sense, among others by helping to establishing a knowledge center and alerting service for government and vital sectors in the Netherlands.

Meeting ID: 852 6990 9362 Password: 459004

We are looking forward to the talk and to your participation.
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Zoom Session "Satellite Drag Effects" with Eelco Doornbos

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26th January 2023 – **Planetary Space Weather Science and Solar System Exploration** with Christina Plainaki

2nd February 2023 – **Space Weather Impact on Radio Wave Propagation** with Norbert Jakowski

9th February 2023 – **Using AI to Predict the State of the Space Environment** with Enrico Camporeale