

# Space Physics Seminar

## Thursday, December 3, 2015

### Charged interstellar dust in the heliosphere: trajectory simulations and a legacy of 16 years of Ulysses measurements

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#### Abstract:

Interstellar dust has long been regarded as an annoyance for astronomical observations because it obscures and reddens the starlight to observe. However, in the last half a century it became a topic of interest on its own as it plays a vital role in star and planet formation. Interstellar dust cannot only be observed with astronomical means, but also in-situ with spacecraft because the solar system moves through a local cloud of such interstellar gas and dust.

The flow of interstellar dust in the solar system is shaped by the solar radiation pressure force and solar gravity, in a stationary way. The Lorentz force, due to the motion of these charged dust particles through the interplanetary magnetic field, makes the flow non-stationary as it depends on the 22-year Hale cycle. In this talk we explain the dynamics of these dust grains through computer simulations and we put them in the context of the 16 years of in-situ Interstellar Dust data obtained by the Ulysses spacecraft from 1992 until 2008. By combining the simulations and the data of the interstellar dust flux, direction and mass distribution, we can constrain some of the dust properties and also learn about the role and structure of the inner and outer regions of the heliosphere.

**3:30 pm**

Refreshments  
CAS Room 500

**4:00 pm**

Seminar  
CAS Room 502

#### Next Week

- AGU Practice Talks and Posters



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