

Numerical Modeling of the Heliotail

Saturday, 28 September 2013 09:25 (30 minutes)

The heliotail structure is of interest for the analysis of the Lyman-alpha absorption in the direction of the nearby stars, the energetic neutrals (ENA) production, and possibly cosmic ray acceleration. Recent Interstellar Boundary Explorer (IBEX) observations revealed rather complex topology of the heliotail (McComas et al. 2013). We performed 3D, MHD-kinetic modeling of the solar wind interaction with the local interstellar medium to analyze the heliotail region to distances up to 5000 AU downstream. We examined the role of the interstellar magnetic field in shaping the heliopause. The heliospheric current sheet behavior and the heliopause instability are analyzed. We determined that the heliopause is noticeably squeezed. We also show that there is no well-defined boundary between the solar wind and the local interstellar medium in at distances greater than 1500 AU.

Primary author: Dr BOROVIKOV, Sergey (University of Alabama in Huntsville)

Co-authors: Prof. HEERIKHUISEN, Jacob (University of Alabama in Huntsville); Prof. POGORELOV, Nikolai (University of Alabama in Huntsville)

Presenter: Prof. POGORELOV, Nikolai (University of Alabama in Huntsville)

Session Classification: Numerical Modeling of the Heliotail - Sergey Borovikov, U of Alabama - Huntsville, given by Nick Pogorelov

Track Classification: Sergey Borovikov