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The complex 3D structure of the solar wind plasma flow in the inner heliosheath under solar minium conditions

Dmitry B. Alexashov (1), Vladislav V. Izmodenov (1,3), Eugenii Mogilevskii (3), and Michael S. Ruderman (4)

(1) Institute for Problems in Mechanics Russian Academy of Sciences, (3) Moscow State University, Faculty of Mechanics and Mathematics, Department of Aeromechanics, Moscow, Russian Federation (izmod@ipmnet.ru), (4) Sheffield University, UK

In this paper we present the first results of 3D kinetic-MHD model of the solar wind interaction with the local interstellar cloud (LIC) where the effects of the helio-latitudial dependence of the solar wind parameters at solar minimum are considered simultaneously with the effects of the rather large interstellar magnetic field of 4-5 microGauss. It will be shown that the resulting flow of the plasma in the vicinity of the heliopause is very complex by having a rather extended stagnation area near the upwind direction. The numerical results will be examined against available Voyager-2 data of the solar wind parameters in the heliosheath. Some predictions of the future Voyager measurements as well as precitions of the locations to the heliopause will be given.