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

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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.