



## Testing the h-Wave model of the IBEX ribbon

Adama Sylla (1), Horst Fichtner (1), Hans Jörg Fahr (2), and klaus Scherer (1)

(1) Ruhr-Universität Bochum, Bochum, Germany (asy@tp4.rub.de), (2) Argelander Institut für Astronomie der Universität Bonn, Abteilung f. Astrophysik und Extraterrestrische Forschung, Auf dem Huegel 71, 53121 Bonn, Germany

The Energetic Neutral Atom (ENA) full-sky maps, obtained with the Interstellar Boundary Explorer (IBEX), show an unexpected bright narrow band of increased intensity. This so-called ENA ribbon results from charge exchange of interstellar neutral atoms with protons in the outer heliosphere or beyond. Amongst other hypotheses it has been argued that this ribbon may be related to a neutral density enhancement, or H-wave, in the local interstellar medium. Here we quantitatively demonstrate, on the basis of an analytical model of the principal large-scale heliospheric structure, that this scenario for the ribbon formation leads to results that are fully consistent with the observed location of the ribbon in the full-sky maps at all energies detected with high-energy sensor IBEX-Hi. The evolution of the joint solar wind and pick-up proton velocity distribution function, represented by a so-called kappa-distribution along the plasma flow downstream of the heliospheric termination shock, is studied, too. This velocity distribution of protons, which represent the seed population for the ENAs, can be computed for the whole inner heliosheath.