ZONAL FLOW GENERATION IN NONUNIFORM IONOSPHERIC FLOWS

Khatuna Chargazia*,**, Oleg Kharshiadze**
*Iv. Javakhishvili Tbilisi State University, I.Vekua Institute of Applied Mathematics, Tbilisi, Georgia,
**Iv. Javakhishvili Tbilisi State University, Department of Physics, Tbilisi, Georgia

Near Earth space (ionosphere, magnetosphere) is characterized by complicated dynamics and for modeling of such processes, especially at conditions of external nonstationary impact (bow shock) very important is an estimation of determined and stochastic parts of the dynamics, as well as the possibility of the generation of large scale wave and fractal structures. The paper a physical model of the plasma perturbations for experimental data treatment and their physical and theoretical interpretation is obtained. In this model a nonlinear mechanism of interaction of the perturbations with spatially inhomogeneous space flows is considered. Out of these flows a zonal flow is energetically most important. Numerical simulation of formation of such large scale flows is carried out.