

Balikhin M., S. A. Billings, O. M. Boaghe, I. Bates
Sheffield University, United Kingdom

Mathematical model for the Dst index forecast is developed using NARMAX approach to the identification of the dynamical systems. We consider the terrestrial magnetosphere as nonlinear dynamical "black box" system. VB_s and dynamic pressure are considered as inputs to the magnetospheric system, and Dst index as the system output. Quantitative assessment of the developed model is provided in the paper. We have used the derived model to study the responses of the magnetospheric system for a number of particular disturbances.