



## **Modeling of severe geomagnetic storms of solar cycle 23 by means of artificial neural networks**

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We set up a model for strong geomagnetic storms of solar cycle 23 using the method of artificial neural networks combined with an empirical model of the solar wind magnetosphere interaction. The set of solar wind data obtained from the ACE satellite is considered and the corresponding geomagnetic response is modeled and compared with real data. The discontinuity in magnetic field at the magnetopause is shown to play a key role in this study. The geomagnetic response is evaluated in terms of the Dst index. To assess the model performance, we compute the skill scores, namely the correlation coefficient and the prediction efficiency. We compare the model with previously known similar models based on artificial neural networks.