

# 1 Study of prediction method using modified FS index for space weather events

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We develop a method using modified FS index for predicting the profile of the geomagnetic disturbance ( $Kp$  or Dst index). FS index is a coupling function based on the point of view that the energy transferring into magnetosphere and the structures of the shock waves would determine the changes of geomagnetic disturbances, especially the changes during the recover phase. In this work, the south component of interplanetary magnetic fields and the solar wind speed are introduced into the FS index. By using observations of a set of space weather events, the coefficient of the modified FS index was determined. To test this method we also use it in another set of space weather events, and the results show that the modified FS index could be a good prediction diagnosis for geomagnetic disturbances in the period of space weather events.