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A PARTICLE SWARM OPTIMIZATION BASED INPUT VARIABLE SELECTION METHOD FOR SPACE WEATHER PREDICTION MODEL

Abstract

Since a complete understanding of the space environmental processes has not reached yet, data driven methods are pursued to be complementary to space weather predictions. During the model-building procedure, input variable selection(IVS) plays a key role to avoid overfitting or under-fitting. An improved particle swarm optimization algorithm combined with distance correlation is adapted to deal with the IVS problem in this paper. Some synthetic data sets and real data set are served to validate the proposed method and a support vector machine model is built to give the prediction results, which further confirm the algorithm's effectiveness.