Predictions of Solar Flares using Neural Networks and Local-Area Helioseismology

Jesper Munk Jensen
Swedish Institute of Space Physics, Lund, Sweden

Using local-area helioseismology it has become possible to investigate the subsurface conditions surrounding active regions in unprecedented detail. We use observations of subsurface flow obtained using ring-diagram analysis and time-distance helioseismolgy to explore the connection between the observed flows around active regions and their flaring activity. For this purpose we have developed a neural network for flare prediction that uses helioseismic flow data as input parameters along with more traditional inputs such as the size and complexity of the active region. Here preliminary results from this work are presented.