



A statistically-based threshold scale for geomagnetic disturbances

Judith Palacios, Antonio Guerrero, Consuelo Cid, Elena Saiz, and Yolanda Cerrato

Universidad de Alcalá, Space Weather Group, Dpt. of Physics and Mathematics, Alcalá de Henares, Spain
(judith.palacios@uah.es)

We present a new method of obtaining thresholds, to range the geomagnetic storms intensity. Since many of the thresholds that are commonly used to classify them are set ad-hoc, this procedure aims at avoiding arbitrariness by finding thresholds with a statistical rationale. The thresholds are obtained by fitting different statistical distribution functions to a geomagnetic index data, making use of these best distribution parameters. These thresholds set a new scale. The dataset used for this work is the mid-latitude high-resolution Local Disturbance Index $LDi\tilde{n}$, and its time derivative $LCi\tilde{n}$, but the procedure can deal with any other geomagnetic index data.