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Solar wind parameter distributions and thresholds for extreme values

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

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

A statistical analysis of the solar wind parameters observed during the whole ACE mission duration, from 1998 to 2016, has been performed. These high quality data taken by MAG/SWEPAM and SWICS comprise solar wind parameters plus solar wind ion composition. The analysis includes interplanetary magnetic field, proton temperature and density, solar wind velocity and compositional anomalies. This communication shows the most relevant results of the analyses, including the variety of parameter distribution shapes, the goodness of distribution functions for fitting the solar wind parameter distributions, the possibility to establish thresholds for extreme values, and the dependence of the data distributions with solar cycle.