



A study of satellite magnetic data for signatures of extreme geophysical events

G. Balasis (1), M. Manda (2), and V. Lesur (2)

(1) National Observatory of Athens, Institute for Space Applications and Remote Sensing, Athens, Greece (gbalasis@space.noa.gr, +302106138343), (2) Helmholtz-Zentrum Potsdam, Deutsches GeoForschungsZentrum-GFZ, Potsdam, Germany

This paper discusses the applicability of a variety of highly sensitive signal processing techniques to space-borne magnetic field measurements aiming at the detection of signals originated from the occurrence of extreme geophysical events (earthquakes, tsunamis, magnetic storms etc.). The signal processing methods are based on linear and nonlinear analysis tools (i.e., wavelet transforms and entropy measures, respectively). The results from these analyses of satellite magnetic time series concerning the Sumatra great earthquake and tsunami of December 2004 and the Halloween magnetic superstorm of October 2003 will be discussed.