



1 Development an alarm system for human artifacts to protect from solar extreme events as natural hazards

M. Mirmomeni (1), C. Lucas (1,2)

(1) Control and Intelligent Processing Center of Excellence, Electrical and Computer Eng. Department, University of Tehran, Tehran, Iran, (2) School of Cognitive Sciences, Institute for studies in theoretical Physics and Mathematics, Tehran, Iran, (m.mirmomeni@ece.ut.ac.ir / Fax: +98 21-88725029 / Phone: +98 21-88020403, lucas@ipm.ir / Fax: +98 21-88725029 / Phone: +98 21-88020403)

Space weather hazards in recent years become a major area of investigation, especially due to the advent of satellite technology. Design of reliable alerting and warning systems is of utmost importance and international collaboration is needed to develop accurate prediction methodologies before the next strikes. This paper examines the main known risks for human artifacts which could be happened by space weather natural hazard. After that, a combination of singular spectrum analysis and locally linear neuro-fuzzy modeling technique is proposed to make accurate long term prediction of solar extreme events which could be used as a powerful alarm system to protect human artifacts from such natural hazards.