Extreme space weather scenarios

Abstract:
During the EGU General Assembly, held in Vienna, Austria, between the 18th and the 22nd April 2016, the JRC chaired a session titled: "Extreme space weather scenarios". We reproduce the abstract of the session below: Many technological systems are at risk due to space weather. These systems include, for example, satellites, the power grid, communication and navigation networks, and aviation. Extreme space weather might represent a great hazard to those infrastructures. This session is intended to provide insights in the magnitude, duration and frequency of extreme events, including, but not limited to, the following: • Solar energetic particle events (flux and fluence) • Electron enhancement events • X-ray and radio bursts • Geomagnetic storms • High-speed solar wind Those scenarios should define the intensity, spectrum, and duration of the relevant physical parameter that we should expect for different periods: 25, 50, 100 or 200 years. The idea is that the system operator can use the scenario proposed for the period of interest to assess the risk to the system. The session was organized between Carlos Armiens (Joint Research Centre), Nigel Meredith (British Antarctic Survey), Alan Thomson (British Geological Survey), Ahmed Hady (Cairo University), Christine Amory-Mazaudier (Laboratoire de Physiques des Plasmas/CNRS/UPMC), Valentina Zharkova (University of Northumbria) and Nicola Scafetta (University of Naples Federico II) and consisted on both oral and poster presentation parts. This document presents the abstracts of the different contributions accepted to the session.

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