

Title: Geomagnetic storms: How bad can they be?

Abstract

Today's technology-driven society has become very vulnerable to severe solar storms, such as coronal mass ejections (CMEs). Fast Earth-directed CMEs may cause extreme geomagnetic storms with large geomagnetic variations and accompanied problems for the power industry. In 2014, the NASA Living With a Star (LWS) program launched the LWS Institute under which a Geomagnetically Induced Current (GIC) working group was selected to operate from January to December of 2015. One of the critical goals of the LSW GIC working group is to identify open scientific question pertaining to GIC. In this presentation, we report on the assessment of geospace data and state-of-the-art numerical modeling that was performed to understand how bad space weather conditions can get. This study will enable us to form conclusions concerning key requirements for modeling and interpretation of extreme space weather events.