



## **Forecasting Geomagnetic Storms and Solar Energetic Particle Events: the COMESEP Project**

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COMESEP (COronal Mass Ejections and Solar Energetic Particles), funded by the European Union Framework 7 programme, is a three-year collaborative project that has been running for one year. Tools for forecasting geomagnetic storms and solar energetic particle (SEP) radiation storms are being developed under the project. By analysis of historical data, complemented by the extensive data coverage of solar cycle 23, the key ingredients that lead to magnetic storms and SEP events and the factors that are responsible for false alarms are being identified. To enhance our understanding of the 3D kinematics and interplanetary propagation of coronal mass ejections (CMEs), the structure, propagation and evolution of CMEs are being investigated. In parallel, the sources and propagation of SEPs are being examined and modeled. Based on the insights gained, and making use of algorithms for the automated detection of CMEs, forecasting tools for geomagnetic and SEP radiation storms are being developed and optimised. Validation and implementation of the produced tools into an operational Space Weather Alert system will be performed. Geomagnetic and SEP radiation storm alerts will be based on the COMESEP definition of risk. COMESEP is a unique cross-collaboration effort and bridges the gap between the SEP and CME scientific communities. For more information about the project, see the COMESEP website <http://www.comesep.eu/>. This work has received funding from the European Commission FP7 Project COMESEP (263252).