

EURISGIC

European Risk from Geomagnetically Induced Currents

PROTECTING CRITICAL INFRASTRUCTURE IN EUROPE

Geomagnetically induced currents (GICs) from solar storms pose a major risk to the operation of power transmission grids in Europe and across the globe. The EURISGIC project seeks to mitigate this natural hazard, developing European capability for GIC forecasting and warning.

With the progressive integration across Europe of interconnected and geographically wide power transmission grids, the risk from fallout caused by GICs during solar storms is exacerbated. Hence there is a need for a greater scientific understanding of phenomena in the solar-terrestrial environment that lead to GICs, and the development of a capability in GIC modelling, forecasting and mitigation.

The EURISGIC project takes on this major challenge, modelling GIC in power transmission grids throughout Europe, with a view to establishing a European capability for 30-60 minute lead time forecasts of GIC events.

Indeed, the project will produce the first European-wide real-time prototype forecast service of GIC in power

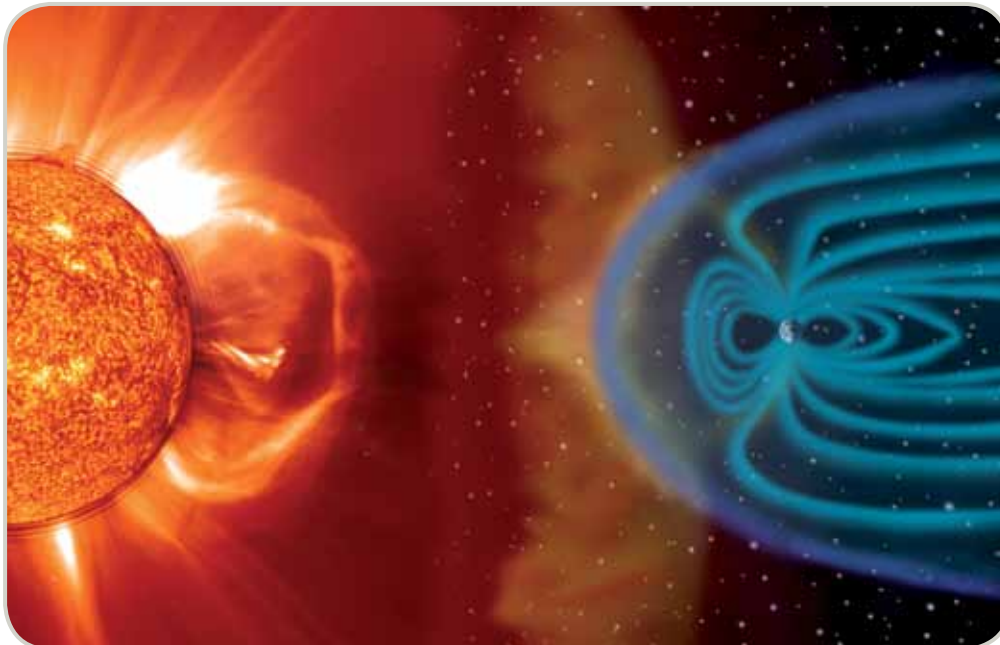
systems, based on in-situ solar wind observations and comprehensive simulations of Earth's magnetosphere. Moreover, by utilising geomagnetic recordings, EURISGIC will derive the first map of the statistical risk of large GIC throughout Europe.

In combination, early warning forecasts, risk maps and worst-case scenario assessments provided by EURISGIC will contribute to mitigating the risk that GICs represents, thereby avoiding destruction of transformers and enhancing the protection of Europe's critical infrastructure.

Partners from the US, Russia, and several European countries will work together in this project to achieve EURISGIC's ambitious goals, which have the potential to enhance the security of critical infrastructure worldwide.



ARI VILJANEN
IS PROJECT COORDINATOR



sunearth © EURISGIC

EURISGIC will develop 30-60 minute forecast warnings of geomagnetically induced currents (GIC) threatening critical infrastructure, such as power grids.

QUESTIONS & ANSWERS

What do you want to achieve with this project?

EURISGIC will integrate the best international expertise to provide capability in forecasting geomagnetically induced currents on a Pan-European scale. We will also analyse the valuable long-term archives of geomagnetic recordings to assess statistically the GIC risk in Europe.

Why is this project important for Europe?

Geomagnetically induced currents do not respect national borders, but they do affect the whole Earth during severe space weather storms. Due to the increasing interconnection between power grids, the risk from harmful continental-scale GIC effects is larger than before.

How does your work benefit European citizens?

The EURISGIC project will improve the European awareness of space weather effects on ground-based infrastructures. A special target audience is power industry which will exploit the results of EURISGIC to help mitigate problems in power transmission.

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LIST OF PARTNERS

- Finnish Meteorological Institute, Finland
- British Geological Survey, Natural Environment Research Council, United Kingdom
- NeuroSpace, Sweden
- Swedish Institute of Space Physics, Sweden
- Geodetic and Geophysical Research Institute, Hungary
- Polar Geophysical Institute of the Kola Scientific Center of Russian Academy of Sciences, Russia
- The Catholic University of America, United States

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PROJECT INFORMATION

European Risk from Geomagnetically Induced Currents
(EURISGIC)

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