



Space weather services at the Finnish Meteorological Institute

Tiera Laitinen, Ari Viljanen, Minna Palmroth, and Kirsti Kauristie
Finnish Meteorological Institute, Helsinki, Finland (tiera.laitinen@fmi.fi)

The Finnish Meteorological Institute (FMI) operates a space weather service that combines the expertise of research scientists with the 24/7 duty availability of meteorologists. The service provides:

- warnings of extreme space weather events to the national LUOVA natural hazards early warning system
- a daily popular space weather report and aurora probability forecast on the FMI web service
- aurora nowcasting based on magnetic measurements, and real-time imagery.

These new services have been built on a long tradition of space weather research, whose main lines at the FMI include:

- administering the Nordic magnetometer network IMAGE
- maintaining all-sky cameras for auroral imaging
- modelling geomagnetically induced currents
- developing global MHD and Vlasov simulations of the magnetosphere.

The FMI space weather service shows how synergies can be found between established tropospheric weather services and new developing space weather services, and how research expertise has been transitioned to an operative service cost-effectively. The 24/7 duty service, whose cost exceeds the resources available to space weather services in Finland, is provided by meteorologists. They are supported by space research scientists, who have prepared simplified monitoring tools, instructions and guidelines for the duty staff. Research scientists also provide a daily briefing to the duty staff and 24/7 consultation when major space weather events occur.