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ESSEM COST Action 724

Developing the basis for monitoring, modelling and predicting Space Weather

Descriptions are provided by the Actions directly via e-COST.

Since a long time, the occurrence of the 11-year cycle of the Sun is known. The solar activity is the main driving force of Space Weather which affects the interplanetary space and planetary magnetospheres, ionospheres and atmospheres. Extreme space weather conditions have economical consequences and may threaten safety and security of humans and technological infrastructures. The impact of space weather ranges from technical problems with satellites arising from charged particles to problems experienced by power transmission grid operators on the ground during geomagnetic storms.

The main goal of the Action was to develop a European framework for the science underpinning space weather applications, as well as exploring methods for providing a comprehensive range of space weather services to a variety of users, based on modelling and monitoring of the Sun-Earth system.

Two of the main successes of the action were to gather a community of 28 countries associated with the European Space Agency (ESA) and the COST Action 296. As nowadays there is no international consensus on a definition of Space Weather, the Action agreed on a European definition of Space Weather: 'Space Weather is the physical and phenomenological state of natural space environments. The associated discipline aims, through observation, monitoring, analysis and modelling, at understanding and predicting the state of the Sun, the interplanetary and planetary environments, and the solar and non-solar driven perturbations that affect them, and also at forecasting and nowcasting the potential impacts on biological and technological systems'.

The Action created a European Space Weather Web Portal (<http://www.spaceweather.eu/en>) and initiated the annual European Space Weather Week (ESWW). The 4th ESWW was held in Brussels on 5-9 November 2007 and convened 150 participants. The Action supported 35 short term scientific missions and organised in 2006 a space weather school with ICTP (Trieste, Italy) and UNESCO. In total, 60 participants were funded. The Action also published 2 books, 2 special issues of Annales Geophysicae and more than 350 scientific papers in international refereed journals. Two special issues are still in preparation and are planned to be published in December 2008 (Acta Geophysicae) and early 2009 (Space Science Reviews).

Additional information is available on the website developed by the Action (<http://cost724.obs.ujf-grenoble.fr/>).

Earth System Science and Environmental Management COST Action 724

- ▶ **Description**
- ▶ Parties
- ▶ Management Committee



General Information*

- Chair of the Action:**
[Prof. Jean LILENSTEN](#) (FR)
- Vice Chair of the Action:**
[Dr Anna BELEHAKI](#) (EL)
- DC Rapporteurs:**
[Dr Niels LARSEN](#) (DK)
- Science officer of the Action:**
[Dr Basak KISAKUREK](#)
- Administrative officer of the Action:**
[Chandrasa SJAMSUDIN](#)

Downloads*

- Action Fact Sheet**
[Download AFS as .RTF](#)
- Memorandum of Understanding**
[Download MoU as PDF](#)
- Final Report**
[Download Final Report as PDF](#)

Websites*

- Action website:**
<http://cost724.obs.ujf-grenoble.fr/>
- Domain website:**
<http://www.cost.eu/essem>

* powered by e-COST

Publications

- ▶ [Developing the Scientific Basis for Monitoring, Modelling and Predicting Space Weather](#)

Last updated: 02 May 2011 