

23rd SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)
Policy and economic aspects of space weather (2)

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SWIFTER-ACTION - A SPACE WEATHER VIRTUAL ORGANIZATION

Abstract

Collecting and using the data necessary to specify the conditions that define near-Earth space weather is currently beyond the capability of any one organization or country. The scientific and the operational community are faced with the problem of acquiring the data and building up the sets of tools required to understand the observations. This, too, is a challenge beyond the means of any one organization. In addition, as new sources of data become available they must be accommodated with their attendant issues. Models, while increasingly available, present their own set of issues. These models require computational resources (super computers) that are beyond the means of many members of the international Space Weather community. In addition, models produce enormous volumes of data that present storage and access challenges. SWIFTER-ACTION is our concept for a virtual space weather organization. Virtual organizations can be loose confederations of member entities (individuals, commercial, governmental or non-governmental organizations) who cooperate to address a common problem. Virtual organizations can even be formed within a traditional organization to address a particular problem. The hallmark of a virtual organization is that the component members are not in the same physical location or organization. Three principal components make up this Space Weather virtual organization: 1) A virtual observatory 2) An electronic conferencing facility 3) A shared, open source software library A virtual observatory or VxO provides the means for users to access data without requiring that the users have a detailed knowledge of the data formats or that the users have all the data available on their local site. The VxO provides the means for the user to locate relevant data and the means to pull subsets of those data across the internet to their site. The existence of data or information does not imply knowledge. We plan to provide support for the Space Weather community through a series of focused Space Weather electronic conferences. This e-conference capability is also important because it enables the identification of subject matter experts for the community. In other words, participants in the e-SWIFTER social network will be able to share knowledge about resources (human as well as data) in addition to sharing in the interpretation of space weather data. The third element in SWIFTER-ACTION is a shared open source library of tools for the visualization and analysis of the data.