

Space Weather Roadmaps

21 /11/2014, 16:30 to 18:00, Reine Elisabeth, conveners: S. Poedts & K. Kauristie

The Space Weather roadmaps splinter session was conceived in the way splinter sessions are supposed to be conceived, namely with the strong emphasis on discussion. No presentations were planned. The about 25 participants got the following preliminary information. We had foreseen to address questions like

What topics in SW research (in theory, models and observations) should be emphasized to get leaps forward in SW services?

How to enhance knowledge exchange between SW service providers and users?

How to attack the problems in data dissemination (data access and standardization issues)?

How to support international coordination to ensure continuity of some key S/C missions and to get new missions?

How to support the research-to-operations transition of SW codes?

These questions were projected on the big screen and served as a lead for the discussion.

There was first a discussion on the necessity of different roadmaps for different purposes, because although they are indeed partly overlapping, they are at the same time very different. It was remarked that it is important to show the relationship between the different roadmaps, like the 'science' roadmap of COSPAR LWS, the SWWT roadmap, the SSA Architectural roadmap, the WMO recommendations (which are strictly for observations), etc. It was remarked that in SSA there are two approaches. There is first the top-down approach, which has led to the architectural design study, and then there is also the bottom-up approach which is precisely to review what the current capabilities are and what gaps there are and what is needed to fill these gaps. As a matter of fact, the latter was one of the main goals of the SN-1 study. However, despite the fact that there are a lot of roadmaps, none of them is world-wide. They are all limited to a continent or even to a single country. This indeed poses quite a challenge. There is some competition involved and also some politics.

Regarding enhancing knowledge exchange between SW service providers and users, the most important thing is to create a model that produces information that is immediately useful for a user. During the EU FP-7 program there were a lot of projects that developed SW assets and models. But these were mostly separate efforts. What we really need is coordination, someone or some instance with a vision and a global plan. The individual projects should be steered and all contribute small or larger pieces of the bigger puzzle. This bigger picture is precisely what the roadmap should provide.

Regarding topics in SW research one big problem is the magnetic structure of a ICME, which was mentioned as very needed in the COSPAR roadmap. Another question, that has been addressed in the WMO, is how many magnetometers we need and where they should be placed. This should be studied and quantified with our models and once the results are known, one can prioritize where the data is needed. This is important given the limited resources. It was remarked that one also needs to quantify the needs, because for instance, in some cases one needs a certain accuracy and if it cannot be delivered, there is no need to bother anyway. So the user community and the service providers need to communicate more to each other.

Regarding training and education the SW school for engineers was mentioned. It was organized for the second time this year and was focusing on HF communication, ionospheric transition and GNSS effects. Next year it will be organized again and this time it will focus on GICs. Masha Kuznetsova mentioned her educational activities at CCMC with summer internships involving students in SW forecasting which is a great experience for them for any career path they will choose later. An example where training and education is need is data assimilation. This is a good recommendation for a roadmap, actually, that this effort is needed. There is research on how to do this and this research should be funded.

The discussion came to an end around 17h35.