

# Harmonisation of SEP data calibrations

---

*ESWW11, Liège, Belgium, 18 Nov 2014*

## Minutes of Splinter Session (DRAFT v0.1)

### Agenda

- 14:00 Approval of the agenda
- 14:05 Report on the Boulder meeting (JR)
- 14:15 Report on the ISSI proposal (DH)
- 14:25 Presentations by participants (JC, JR, PJ)
- 14:50 Round-table discussion
- 15:25 How to proceed
- 15:30 End of the session

### Attendees (not exhaustive)

DH – Daniel Heynderickx	BH – Bernd Heber
JR – Juan Rodriguez	BB – Bern Blake
PJ – Piers Jiggins	JF – Joe Fennell
JC – John Cooper	HE – Hugh Evans
SML – Susan McKenna-Lawler	SH – Stuart Huston
IS – Ingmar Sandberg	ED – Eamonn Daly

### Report on the Boulder meeting (JR)

Following the approval of the agenda a report on the outcomes of the last meeting held at the end of Space Weather Workshop in Boulder (April 2014) was delivered by JR. The full minutes of that meeting are available to all members of the working group. [Later during the ESWW11, a report on this meeting was published in *Space Weather*.]

One item which was discussed in more detail was the need for data sets which can be used for validation efforts to provide confidence and error bars on the flux data of the reference data set. For the production of a reference data set instruments on-board GOES and IMP-8 are widely accepted for their longevity and complementary characteristics. However, additional data sets should be proposed for both the reference data set and validation data sets and put on a website accessible to all. COSPAR was identified as a possible vehicle for discussing datasets and maybe hosting a site on which a list of standard datasets coming out of the work being done by the working group.

DH indicated that such a working group webpage could also host guidelines for cross-calibration and validation exercises as a form of best practice.

Information should also be gathered regarding caveats for the data and guidelines for use and the group should determine what the minimum level the data and documentation should be at in order to be used for a calibration and what uses the different data sets are appropriate for.

SML identified the LION detector on SoHo that should be on the list and BB identified that the CraTeR detector on LRO should be on the list.

### **Report on the ISSI proposal (DH)**

Next DH reported on the response from ISSI to the proposal submitted earlier this year by the working group for an international team to include 1-2 focussed meetings of up to 1 week in length over a period of 2 years. Although the proposal was well received and deemed good it was not chosen for this year. The group were encouraged to re-submit the proposal but as a working group instead of a team. ISSI working groups often produce a volume in the ISSI Scientific Report series, which is intended primarily for important results concerning methodology or techniques. One problem was that the presence of additional meetings such as Space Weather Workshop and European Space Weather Week in the proposal apparently confused ISSI. The team needs to consider how to frame these other meetings as a bonus possibly stressing that these are not replacements for the meetings but a chance to update on work done in between these reviews.

SML from her experience with ISSI stressed that they will give you the facilities but will then leave you alone to organise and carry out the work. This will require a reasonable effort from all members of the working group.

All members are encouraged to join the mailing list by sending an email to DH ([dhconsultancy@skynet.be](mailto:dhconsultancy@skynet.be)).

BH asked if it might be possible to have a meeting at, for example, ESTEC if ISSI is not successful again and PJ/ED said that ESA were very open to such a possibility.

### **John Cooper participant presentation**

JC highlighted the functionality available through the Virtual Energetic Particle Observatory - [vepo.gsfc.nasa.gov](http://vepo.gsfc.nasa.gov) (which can be seen as an extension of OMNIWEB). This includes scatter (correlation) plots with linear regression through a simple interface in order to compare flux data.

A key question coming out of this presentation is what the reference location for the data source(s) should be. There are several databases existing include VEPO, SEPSERVER and SEPTEM. PJ highlighted we don't need a new database, in fact creating one must be seen as a failure, however we do need a data set that is internationally recognised and available through your 'choice' of access point. This should allow for easy mirroring on other sites. It was suggested to provide a universal list of data sets and access through the intended COSPAR site.

JC said that they want to provision the best version of the data which is (mostly the latest) but the highlighting of the versioning of data was seen as critical along with transparency of what processing has been done.

DH pointed out that this should be seen as a one stop shop for seeing the data we can access. SH said that another way this could be imagined is as a clearing house. It was concluded that perhaps

the best solution would be for embedded links in multiple places (on national sites or VOs) and a central (COSPAR) spot for an overview.

DH highlighted that agencies and bodies 'owning' data must make data available in order to be considered and licencing needs to be simple and access easy.

JC pointed out that the VO architecture could support data mirroring and sharing and versioning. It was asked if systems such as VEPO, SEPSERVER and SEPTEM might consider placing links to the other systems on their pages.

HE pointed out that the best format for the group would be a Wiki page (possibly on Wikipedia). PJ asked if perhaps this would be possible on the COSPAR page – DH to investigate.

### **Juan Rodriguez participant presentation**

JR made a presentation of the cross-comparison of NOAA GOES and Van Allen Probes REPT data being done in collaboration with University of Colorado LASP. In the 06-10 Jan 2014 SEP events, there is the best opportunity so far identified for cross-calibration with Van Allen Probe data. JR showed a comparison of spectra using the IS method which as a result of the change in the identified effective energy results in a really nice overlap between GOES-13 data and Van Allen Probes/REPT.

JR pointed out that the REPT fluxes used here are spin-averaged but more could be done in terms of East and West facing comparisons. JF pointed out that the Van Allen data are not restricted to an East-West comparison, like GOES – the anisotropy can be studied as a function of multiple angles.

We need a list of validation points (events in time) but this is based on the data set overlaps and this is something that should be identified by the group as part of preliminary work.

JC highlighted that NASA will have a call for VOs next year for such collaborations.

### **Piers Jiggins participant presentation**

PJ made a presentation on estimation of errors between cross-calibrated data sets which is a key parameter to be attached to a data set.

Background removal was also discussed but more work is needed to understand all the methods presently used and to identify the most suitable for this group.

### **Actions**

HSDC-ESWW11-AI-1: DH - Investigate a COSPAR page for a dataset list perhaps to include database linking

HSDC-ESWW11-AI-2: DH - Review responses and make a new ISSI proposal

HSDC-ESWW11-AI-3: PJ - Gather a documenting of different background subtraction methods

HSDC-ESWW11-AI-4: PJ - Circulate the minutes via the mailing list