**Minutes of S2S Extreme Weather Sub-project teleconference**

**Wednesday 3 February 16:00 GMT**

Were present: Hai Lin, Christophe Lavaysse, Minguye Chen, Arun Kumar, Joanne Robbins, Brian Golding, Laura Ferranti and Frederic Vitart

1. **Review of minutes of the last meeting:**

* The science plan has been updated and uploaded in the S2S extreme weather project webpage
* Links with WGSIP and WCRP Grand Challenge on extreme prediction and attribution: there was a presentation on S2S at the first workshop organized by this Grand Challenge in Oslo. Action: Frederic to contact the chairs of the Grand Challenge on extreme prediction and attribution to discuss the actions and conclusions from this meeting which are relevant to S2S.

1. **Review of ongoing studies**

* Laura Ferranti showed the use of EFI and CDF diagnostics on a case study of heat wave over South Europe in July 2015. Results suggest that the ECMWF model displayed some skill to predict this heat wave at the time range day 12-18, but not so much in week 3. This event seems to have been triggered by a Rossby wave propagation which is likely to be difficult to predict accurately 3 weeks in advance. Laura plans to extend this study to other cases in Europe and other S2S models. She also plans to produce EFI maps from S2S models. The presentation is available here:

http://www.s2sprediction.net/xwiki/bin/download/Main/Extremes/Report\_extreme\_4Feb2016.pdf

* Arun and Minguye mentioned that they have looked at the modulation of seasonal mean extreme rainfall events by SSST and large scale circulation over North America, ( teleconnections of extreme events). They have used the CFS.V2 re-forecast data over the period 1999-2010. They have plan to extend this study to sub-seasonal time scale and S2S models.
* Charles Jones mentioned by email that he started working on the case study: sub-seasonal variability of precipitation in the US west coast during the 2015 El-Nino event. He is now working on downloading the S2S data.
* Christophe Lavaysse is currently working on the prediction of droughts over Europe using weather regimes as predictors
* Frederic showed some results regarding the modulation of tropical by the MJO in several S2S models. Over the Southern Hemisphere, the climatology of model tropical cyclones and the modulation of TC activity by the MJO are generally well reproduced by the models. In the North Hemisphere, models tend to underestimate the number of TCs, which is partially due to the coarse resolution of S2S data. The models show some skill to simulate the modulation of TC activity over the Northern hemisphere by the MJO, except for MJO phases 8 and 1 over the Atlantic. Hai suggested to goup phase 234 and 678. Christophe suggested to define the TC maximum wind thresholds in the models by comparing the pdfs of observed vs model winds.

The ECMWF model showed some skill up to 4 weeks in advance to predict higher probability of tropical cyclone Pam landfall over Vanuatu islands. Joanne mentioned that she volunteers with an organisation called MapAction who were deployed to Vanuatu following the cyclone to help in the humanitarian response and mapping. It is not clear yet how S2S forecasts of TCs could be used by ONGs to take actions, but they could be useful for mapping (collecting data about the region) and maybe start alerting volunteers about a possible event coming. The presentations on TCs can be found here:

* <http://www.s2sprediction.net/xwiki/bin/download/Main/Extremes/S2S%2DTC.pdf>
* <http://www.s2sprediction.net/xwiki/bin/download/Main/Extremes/S2S%2DTC2.pdf>
* http://www.s2sprediction.net/xwiki/bin/download/Main/Extremes/Tropical%20Cyclone%20Pam%20case%20study.pdf

1. **Meetings**

We will have another teleconference in about 4 months. We may organize a S22S workshop on extreme weather in 2017 or 2018. Brian mentioned that HIW will have a workshop in Exeter on 27-29 April, and that it would be nice to have someone from S2S there. He will circulate the details of this meeting to Frederic.