**LS4P Meeting Minutes**

***Date:*** 17:45-19:15, 6th July, 2023

***Venue****:* Room 111 in Palmer Building, Reading, UK

***Moderator:*** Yongkang Xue

***Attendees:***

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| **Name** | **Email address** | **Institution and department** |
| Aaron Boone | aaron.a.boone@gmail.com | CNRS |
| Bethan Harris | bethar@ceh.ac.uk | Climate Scientist at UK Centre for Ecology & Hydrology |
| Constantin Ardilouze | constantin.ardilouze@meteo.fr | CNRS |
| Daniele Peano | daniele.peano@cmcc.it | CMCC |
| Frederic Vitart | Frederic.Vitart@ecmwf.int | ECMWF |
| Hai Lin | hai.lin@canada.ca | ECCC |
| Jing Yang | yangjing@bnu.edu.cn | BNU |
| Joshua Talib | jostal@ceh.ac.uk | Climate Scientist at UK Centre for Ecology & Hydrology |
| Maureen Abla Ahiataku | maureenahiataku@gmail.com | Ghana Meteorological Agency (GMet) |
| Retish Senan | Retish.Senan@ecmwf.int | ECMWF |
| Stefano Materia | stefano.materia@bsc.es | Researcher at Barcelona Supercomputing Centre |
| Vincent Otieno | Vinnywandros@gmail.com | The Technical University of Kenya |
| Xiangbo Feng | xiangbo.feng@reading.ac.uk | NCAS, University of Reading |
| Yalan Fan | yalanfan@mail.bnu.edu.cn | BNU |
| Yangke Liu | liuyangke@lasg.iap.ac.cn | LASG, IAP |
| Yuxian Pan | yuxianpan@mail.bnu.edu.cn | BNU |
| Yuhei Takaya | yuhei.takaya@mri-jma.go.jp | Japan Meteorological Agency |
| Zhijiong Cao | czj9763@g.ucla.edu | UCLA |
| HARA PRASAD NAYAK | hpnayak@g.ucla.edu | UCLA |

***Report by:*** Yalan Fan, Zhijiong Cao

***Agenda Topics:***

* **TOPIC 1: Introduce Attendees**

A brief self-introduction of each attendant

* **TOPIC 2: Introduce of LS4P Current Status**

A short review of LS4P PhaseⅡ;

The possible Topics for Investigation for Each Group;

LS4P PhaseⅡTime Frame

* **TOPIC 3: Discussions** Main contents:

Q1:

*Hai Lin*: Previous work meanly focused on the surface temperature and soil moisture on the mountains. How about the impact of snow cover?

A1:

*Retish Senan*: There are some research on TP snow. For example, some previous work has shown that autumn snow cover can influence the North American temperature through NAO.

*Yongkang*: LS4P includes snow, but the effect of snow in TP and Rocky Mountains is difficult to study. We can discuss and make a plan to focus on the snow as sub-groups’ efforts.

Q2: ??

*Stefano Materia*: What’s the difference in different mountain areas? With respect to LS4P phase one, what’s the difference in the protocol for the Tibetan area? I understand that now we’re going to use the mask also for Rocky Mountains, but for the Tibetan area, is it more or less the same?

A2: ??

*Yongkang*: , like SST For the prediction point of view, we want to have more mountains together, and with the mountains working together, we cannot reproduce the observed temperature. The combination doesn’t work well so we need a better initialization.

Q3:

*Xiangbo Feng*: How and to what extent the wave train impacts the tropic?

A3:

*Yongkang*: The path can from Northern hemisphere to Southern hemisphere, like Hoskins shown in his reports. You can use the data to do your own work that focus on the tropic using the available LS4P data.

Q4:

*Maureen Abla Ahiataku*: How can land conditions on the mountains affect the weather in west Africa?

A4:

*Joshua Talib*: The study is focus on the influences of difference plateaus, *highland regions have an influence on the atmosphere because they’re much higher and therefore they lead to sort of these crossway trains*, and what they want to do is have a look at the influence of different highland regions. So, if we focus on a study over different plateaus like Siberia, it may influence the generation of west Africa wave train.

*Yongkang*: There are some researches, which focus on the plateaus influence on upstream (West Africa). The effect in West Africa is not that significant, but it still has influence.

Q5:

*Joshua Talib*: Is the model data free and available for people to analyze?

*Joshua Talib*: How will climate change influence the response of plateaus? How will climate change the response if climate change reduces the amount of glacier you have? Did you increase the surface temperature variability across the plateau and therefore you’re more likely to see this signal or is it because you have less variations in the amount of glacier? Maybe the signal from the plateau actually weakens, but the climate change increases the surface temperature variability across the plateau?

A5:

*Yongkang*: Certainly! The data is open.

*Yongkang*: The influence is associated with climate change. Before 1980, there is not such many extreme events. We took out the trend and only focus on the variability when we do the analysis. But we don’t know how the trend matters yet. If anyone want to study this, which the Nature is interested in, we can provide the data.

Q6:

*Retish Senan*: Have you found the influence of the model results that coupled/uncoupled with ocean?

A6:

*Yongkang*: For the whole LS4P group, we will not distinguish. But if you run coupled/uncoupled model and found the influence is different, then you can write a paper. We have two issues to study in the future: One is high resolution couple model testing, and another is snow issues.

Q7:

*Hai Lin*: More cases tests, like some cases that are not that extreme? I think it is hard to get a common conclusion from the case study, such as one year's analysis of one region.

A7:

*Yongkang:* First, there were not many extreme cases in the past. And the results we found before was very consistent. The signals in extreme events will be clearer compared to the general cases. Second, From the perspective of S2S prediction, we actually do need more cases to make the results more reliable. So, we can think what is the best way to get a common conclusion and make a proposal to design experiments and see how many groups will participate.

* Conclusion — the next research points

1. Think about the snow cover issues;

2. Test more cases;

3. Some works may be published in high impact journals.