Assessing extreme weather and impacts under the Paris Agreement on climate change

1. **Supervisors:** Dr Dann Mitchell ([Mitchell@atm.ox.ac.uk](mailto:Mitchell@atm.ox.ac.uk))

2. **Summary:** The student will work on the ‘Half a degree Additional warming, Projections, Prognosis and Impacts’ (HAPPI; [www.happimip.org](http://www.happimip.org)) project, which was developed in response to the Paris Agreement on climate change (Mitchell *et al*, 2016). The Paris Agreement was adopted last December, and aims to limit global averaged warming to less than 1.5°C (we are currently at 1°C, [www.globalwarmingindex.org](http://www.globalwarmingindex.org)). However, the scientific community have largely ignored such a stringent climate change scenario, instead opting to assess stronger (originally considered more likely) climate change scenarios. There is therefore a lack of research in this area, which is especially concerning as our policy makers want answers on this issue by 2018. A key outcome of this project will be to contribute to these answers. The aim of the studentship is to identify changes in extreme weather under future climate scenarios, namely 1.5 and 2 degrees globally averaged temperature above preindustrial levels. The project will focus on looking at changes in meteorological extremes under these scenarios, with an initial focus on heatwaves/cold snaps. They will specifically look at key developing regions where climate change will most effect the local populations. **Ref:** Mitchell, Daniel, et al. "Realizing the impacts of a 1.5°C warmer world." *Nature Climate Change* (2016).

3. **Added value:**
   - The student will gain detailed understanding of the climate system, extreme weather and how this fits into the global climate change debate.
   - Research from this project will help to inform on the Intergovernmental Panel on Climate Change (IPCC) Special Report on 1.5°C, due in 2018.
   - The student will learn how to analyse complex data, using a variety of basic statistics through the Python programming language.
   - The student will have the opportunity to attend aspects of our taught MSc course in “Climate Change Science and Policy”.

![Figure 1: Simple schematic of how extreme weather may change in the future.](image-url)