

PhD studentship: Investigating the use of 20th Century reanalyses products to homogenize global land surface air temperature records

The Department of Geography is offering a three-year funded PhD studentship to work with Professor Peter Thorne on the project below. This will start in September 2015, and the successful applicant will be based in the Department's high profile Irish Climate Analysis and Research UnitS (*ICARUS* please see icarus.nuim.ie).

Recently the International Surface Temperature Initiative has released a set of basic data holdings consisting of in excess of 32,000 station records from around the globe ranging from short records to centennial plus length series. These series are the basic data records and contain numerous data artefacts arising from effects such as changes in location, changes in instrumentation, and changes in time of observation. There also exist two 20th Century reanalysis products. These are dynamical reanalyses based upon observed sea surface temperatures and surface pressure observations. Several recent analyses have highlighted close correspondence between the reanalyses products and station and regional series of surface temperatures but with caveats in certain regions and / or periods.

This thesis project will investigate the utility of 20th Century reanalyses products to identify and adjust for data artefacts to create a new and methodologically distinct analysis of land surface air temperatures since at least 1900 and possibly earlier. Publication of results in the peer reviewed literature will be encouraged. It may include collaborations with scientists at the University of Vienna, the European Centre for Medium Range Weather Forecasts and the United States National Oceanic and Atmospheric Administration. Support shall be sought to enable collaborative visits. The results may be expected to contribute to the emerging Copernicus Climate Change Service and may provide input to next generation 20th Century reanalysis projects.

Candidates should have good analytical skills, statistics training, and an ability to code in a scientific language such as Fortran, Python, R or IDL.

Applications

The funding will cover fees plus an annual maintenance grant of €16,000. Applicants should send a CV and covering letter to geography.department@nuim.ie before the closing date of **Thursday 23 April at 4pm**. Please make ICARUS PhD Application the subject header of your email, and please do not send transcripts, papers or any other attachments at this stage.

For informal enquiries contact Professor Thorne via peter.thorne@nuim.ie