

Title: Impact of GHGs: Measuring global temperature change

Speaker: Peter Thorne

Institute: Maynooth University

Session II: Carbon measurement and other related climate variables: Global systems, principals and traceability

Abstract:

If we are to understand climate changes and their causes then robust monitoring of the climate system changes is required. Historical measurements of the climate system have been undertaken for a variety of reasons by a broad range of public and private entities, groups and individuals. Early measurements were at the surface. Since the mid twentieth Century column measures using weather balloons have been undertaken and since the late 1970s sustained satellite measurements programs have been in operation. All of these observing systems have undergone substantive changes over time such that the record is not a homogeneous estimate of the true climate system evolution. Aspects such as change management, measurement characterisation and calibration / validation have either been missing entirely or grossly inadequate. The Global Climate Observing System (GCOS) Reference Upper Air Network (GRUAN) was instigated in 2005 by a diverse range of climate scientists. This network aims to create a long-term network of measurements of the column characteristics at a number of sites around the world that are well characterised and understood. Working with instrument manufacturers and metrologists in the intervening decade the network has transformed from an aspiration to a reality. This talk will summarize the rationale, guiding principles and progress to date before touching upon the work yet to come.