Report of the 11th European Meteorological Society (EMS) Annual Meeting and the 10th European Conference on Applications of Meteorology (ECAM)

Forecasting the weather – ensemble techniques in probabilistic weather prediction

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I was one of the fortunate young scientists to be awarded a Young Scientist Travel Award. I would like to thank the EMS for this award. Without it, I would not have been able to attend the conference. The conference was an excellent forum for scientific discussion, presentation of new and important results, and a superb location to meet with colleagues and friends.

Personally, the main theme that I observed throughout the conference, regarded the importance of communication of scientific results. This included communication to other scientists through visualisation, as well as to end-users, e.g. the public or policy- and decision-makers. This is important and highly relevant, given the focus of the conference on probabilistic methods, because the outputs from probabilistic assessments are not always easy to interpret by a non-specialist.

The issue of communication arose several times during the Opening Addresses and Strategic Lectures at the conference. Dennis Schulze (PRIMET) commented how important probabilistic weather forecasts can be, with reference to whether roads are gritted during the winter. Michel Jarraud (Secretary-General of the WMO) highlighted the importance of considering uncertainty, through probabilistic assessment, for informing international policy decision-making on climate change, such as at the forthcoming Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCC). Also, Laura Ferranti (ECMWF) presented some useful examples of how probabilistic weather forecast information can be presented in more simple ways than probability density functions (PDFs), such as maps that show where there is a 95% probability of daily temperature exceeding 30°C. Ferranti showed how probabilistic forecast methods similar to this were able to give a good forecast of the track of Hurricane Irene earlier in 2011. Moreover, Susanne Theis (DWD) concluded that risk literacy is essential amongst scientists and decision-makers, in understanding how to interpret probabilistic forecasts.

Scientists from KNMI, the Royal Netherlands Meteorological Institute, presented a demo of a novel visualisation tool for exploring the output of climate model data in an interactive 3D (4D) virtual reality environment. KNMI showed how the visualisation tool can be used effectively, to demonstrate climate model capabilities, such as the simulation of intense precipitation events and rapid convergent uplift. Furthermore, KNMI were able to demonstrate the capabilities of the tool in visualising a simulated case of the recent Icelandic volcanic ash cloud event.

A number of posters also highlighted the importance of communication. One of the most prominent of these was presented by Priscilla Marimo (University of Exeter), who reported on an on-going study with the Met Office, which demonstrates the importance of the ways in which probabilistic information is presented. Marimo was also awarded a Young Scientist Travel Award by the EMS.

To this end, I found the discussions and presentations on communication extremely beneficial for my own research. Much of my current work involves producing probabilistic estimates of the impact of climate change on human health and I regularly engage with people involved with policy and decision-making processes. I will be able to integrate some of the methods discussed at the conference into my own research. Moreover, the conference has improved my awareness of some of the key issues in presenting probabilistic information to a non-scientific audience.

I also highly valued the opportunity to present in and participate in the Human Biometeorology session (CE5). Many of the participants were biometeorologists from institutions all across Europe (e.g. the UK, Germany, Slovenia and Greece). This diversity means that it is not always easy to bring together scientists interested in biometeorology but this conference facilitated that. To this end, I enjoyed seeing some of the latest developments in the field. For example, there were a number of interesting discussions regarding the Universal Thermal Climate Index (UTCI) following presentations by Bathvarova and Blazejczyk respectively. There were also important discussions on the potential application of various research projects on tourism (Matzarakis), allergenic pollen (Sofiev), sultriness (Staiger) attention of teenagers in schools (Mazon), and heat health warning systems (Zaninovic). Moreover, I was able to network with other young biometeorologists, which I found very helpful, particularly as I am Chair of the Students and New Professionals Group of the International Society of Biometeorology.

Once again, I would like to thank the EMS for their support in helping me to attend the conference, which I found thoroughly useful and enjoyable.