7th World Congress in Probability and Statistics

Public Lecture

Climate past, climate present and climate future: A tale from a statistician

Speaker: Professor Douglas Nychka
US National Center for Atmospheric Research

Date: Wednesday, 16 July 2008

Time: 6:30pm - 7:30pm

Venue: LT27, Faculty of Science
6 Science Drive 1
National University of Singapore

FREE ADMISSION

About the Speaker

Professor Douglas Nychka is the Director of the Institute for Mathematics Applied to the Geosciences (IMAGe) and a Senior Scientist in the Geophysical Statistics Project (GSP) at the National Center for Atmospheric Research (NCAR) at Boulder, Colorado. Before that, he was at North Carolina State University and National Institute of Statistical Science (NISS), NC.

He is world renowned for ground-breaking and multidisciplinary research that spans a wide range from basic statistical science to atmospheric science, climatology, environmetrics and the geosciences. Through his own work and through his direction as project leader and active research collaboration and inspiring mentorship at GSP, he has exerted a tremendous influence on the modeling and analysis of atmospheric data, such as those in ocean winds, dispersion of pollutants, extreme precipitation and the assessment of climate models. He is a Fellow of the American Statistical Association and was awarded the NISS Jerry Sacks Award for Multidisciplinary Research in 2004.

His current research interests are in nonparametric regression (mostly splines), statistical computing, spatial statistics and spatial designs. He is engaged on projects investigating the large sample properties of geostatistics estimators and applications of inverse methods and hierarchical models to the reconstruction of past climate. He is a key player in the study of climate change.

Abstract

A grand scientific challenge for this century is to understand the complex interrelationships among the physical processes and human activities that define the Earth's climate. One specific concern is the warming of our climate brought about by the increase of greenhouse gases, such as carbon dioxide, being released into the atmosphere. What do we know about the Earth's past climate? Is global warming over the last century real? What is a climate model and how is it used to understand changes in our future climate? In answering each of these questions, statistical science can play a role in quantifying the uncertainty in scientific conclusions, for combining different kinds of information and summarizing complex data.

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