Geological Data Fusion: Tackling the Statistical Challenges of Interpreting Past Environmental Change

An interdisciplinary workshop held at Rutgers University, Thursday-Friday, January 17-18, 2013

DIMACS
Center for Discrete Mathematics & Theoretical Computer Science
Founded as a National Science Foundation Science and Technology Center
http://dimacs.rutgers.edu/

Supported by DIMACS, the Center for Discrete Mathematics and Theoretical Computer Science

The geological records of ancient environmental change provide crucial archives for testing models of Earth system behavior, including those used to project ongoing and future global change. Yet the archives pose many statistical challenges. The data sources are noisy, diverse, and full of gaps. The locations and ages of observations are controlled in part by natural processes. Indeed, the ages of observations are themselves known only through noisy and diverse measurement techniques. This workshop will focus on statistical approaches to overcoming these challenges and making inferences about the Earth's past environments, bringing together Earth scientists, statisticians, applied mathematicians, and computer scientists to address these issues.

Organizers:

Bob Kopp (robert.kopp@rutgers.edu)
Frederik J. Simons (fjsimons@alum.mit.edu)

Informal Website:

http://tinyurl.com/b9odcgo

Official Website:

http://dimacs.rutgers.edu/Workshops/Geological

Workshop Themes:

Paleo-temperature & inference about climate sensitivity
Speakers: Martin Tingley, Julia Hargreaves, Gavin Schmidt, Bala Rajaratnam & Nathan Urban

Paleo-sea level & inference about ice sheet stability
Speakers: Ben Horton, Bob Kopp, Patrick Applegate, Gary Mitchum & Vivien Gornitz

Paleo-climate and paleo-ecological inference
Speakers: Chris Paciorek, Jessica Tierney, Kevin Anchukaitis & Mike Dietze

Paleo-environmental reconstructions & the sedimentary record
Speakers: Shanan Peters, Rina Schumer & Jane Willenbring

Spectral analysis & the identification of climatic pacemakers
Speakers: David Thomson, Linda Hinnov, Jeffrey Park & Stephen Meyers