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Date Submitted: 2014-07-31 10:04
Title: PASI 2014
Event Type: Conference-Workshop

Location:
Buzios, RJ, Brazil

Dates:
6/16-6/26 2014

Topic:
Spatio-temporal statistics

Methodology:
Lectures, practica, workshops with discussions. One workshop participant skyped in, one winter school lecturer skyped in.
The format of the winter school was (for each of 10 topics) theory lecture, practicum (computer exercises on the material covered in theory lecture) and applications lecture.

Objectives Achieved:
Networking across the Americas (and beyond)
Comparison of different non-stationary spatial covariance estimation techniques

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Scientific Highlights:
See report

Organizers:
See report

Speakers:
See web page

Links:
http://www.stat.washington.edu/peter/PASI/PASI_2014.html

File Uploads:
Additional Upload 1: http://www.pims.math.ca/files/final_report/PASI_final.pdf

Pan-American Advanced Study Institute, Búzios, Brazil, June 16-26, 2014

The PASI on Spatiotemporal statistics was funded by a National Science Foundation PASI grant. Additional funding came from the NSF-funded STATMOS network, the Pacific Institute of Mathematical Sciences in Canada, the Nordic Council network SARMA, the UK network CliMathNet, the International Statistical Institute, and six Brazilian agencies (CAPES, CNPq, FAPERJ, INCTMAT, UFRJ and IMPA).

We advertised the Institute at a variety of web sites and mail lists. 123 applications were made to the registration page. Those that came in before the application deadline were evaluated by the steering committee (Lelys Bravo, Universidad Simón Bolívar, Venezuela, Charmaine Dean, University of Western Ontario, Canada, Peter Guttorp, University of Washington, USA, Eliane Rodrigues, Universidad Nacional Autónoma de Mexico, Mexico and Alexandra Schmidt, Universidade Federal do Rio de Janeiro, Brazil). Funding offers were made continuously starting in December, 2013, and continued as long as funds were available.

The Institute had a total of 81 participants, including 18 instructors, 54 winter school participants and 9 workshop participants (most of the instructors and all the winter school students also participated in the workshops). 32 of the participants were female.

Of the participants, 16 came from Brazil, 4 from Canada, 4 from Mexico, Central America and the Caribbean, 11 from Nordic countries, 8 from South America except Brazil, 32 from USA and 6 from other countries.

The main feature of the Institute was the Winter School. It was divided into seven sections (Spatial statistics, Covariance functions, Markov random fields, Multivariate spatial statistics, Spatial extremes, Spatial point processes, and Misalignment). Most sections had a three-hour segment beginning with a theoretical/methodological lecture, then a practicum where students were using R software packages to analyze data, and finally an applied lecture on the same topic by a different lecturer. In most cases the person responsible for the package was leading the practicum. The covariance function section had three such segments. All lectures and practica are available on the Institute web site, http://www.stat.washington.edu/peter/PASI/PASI_2014.html . Two instructors participated remotely using Skype.

We did a preschool assessment of participants' familiarity with the topics covered. There was generally lower familiarity with extremes and point processes, and high familiarity with R.

The postschool assessment evaluated each lecture and practicum separately, asked about the effectiveness of the workshops as part of the structure of the Institute, and the usefulness of the practica. It was generally agreed that the workshops were difficult but interesting, and that the practica were extremely useful for

understanding the material. The opportunity to network, both with the instructors and with the other students, was also a great benefit.

One student emailed the organizers to say “I appreciate from bottom of my heart the opportunity that was given to me to attend the PASI 2014. As a graduate student, my goal was to learn the concepts of spatio-temporal modeling. But, instructors of PASI 2014 have taken us to another level. I have not only learned the concepts, but also have received the hands-on experience on applying them to real data sets and identified the open problems in spatio-temporal modeling. I'll share all the information with my advisor and will contribute to this field. I also would like to thank all the arrangements done by PASI organizing committee and the great greeting and treating from your students. “ One of the instructors, who had to leave after the first week, said “PASI was a terrific conference. It is a rare event when I'm sad to leave a conference, but I wasn't ready to go home. I hope the rest of the conference goes well.”

A second part of the Institute was a workshop on nonstationary spatial covariance models. There are several different approaches to model nonstationary covariances, and the workshop was intended to evaluate these different approaches, determine under what circumstances they can be used, and developing software tools to make them accessible to the community. In order to enable some comparisons, the organizing committee had collected some datasets in advance. Some workshop participants had analyzed some of these in advance, while other participants did some analysis during the workshop. These tasks could not all be finished in the four days allocated to the workshop, but a start has been made, and tasks have been allocated to particular individuals to proceed towards the goals. The winter school participants also attended the workshop. The idea was that they would have been receiving a technical background to enable them, at least partially, to follow the discussions between the workshop scientists. The post-Institute assessment indicated that this had been somewhat successful for this workshop. Particularly, several winter school students commented on how valuable it was to listen to scientific discussions and disagreements.

The third part of the Institute was a more traditional workshop, this time on multivariate spatial statistics. Unfortunately, several of the participants (including the main organizer) had to cancel their appearance, in many cases only shortly before the Institute started. In spite of this, the workshop had some valuable open discussions about open problems and software availability. The winter school participants found much of the material presented too technical for their understanding, but appreciated the presentation of open problems in the field.

In addition to these main parts, one afternoon was dedicated to student/postdoc presentations of their research, and one to senior researcher presentations.