

Course on "SPATIAL STOCHASTIC PROCESSES"

CIME (International Mathematical Summer Center) in Martina

Franca (Italy) during July 1-8, 2001.

Director of the Course is Ely Merzbach (Bar-Ilan University).

The theory of stochastic processes indexed by a partially ordered set has been the subject of much research over the past twenty years. The objective of this summer school is to bring to a large audience of young probabilists the general theory of spatial processes, including the theory of set-indexed martingales and to present the different branches of applications of this theory:

 $_{2}$ stochastic geometry $_{2}$ spatial statistics $_{2}$ empirical processes $_{2}$ spatial estimators and survival analysis.

This theory has a broad variety of applications in environmental sciences, social sciences, structure of material and image analysis.

COURSES

The following sets of 5/6 hours lectures each in English will be offered

- 1. Mixing results for Critical Nearest Particle Systems via Spectral Gap Estimates by Prof. Tom MOUNTFORD (University of California, Los Angeles)
- 2. Level sets and excursions of the Brownian sheet. by Prof. Robert DALANG (Ecole Polytechnique Federal de Lausanne)
- 3. Weak convergence of set-indexed martingales. by Prof. Gail IVANOFF (University of Ottawa)
- 4. Set-indexed martingales and point processes. by Prof. Ely MERZBACH (Bar-Ilan University)
- Stochastic Geometry of spatially structured birth and growth processes; applications to polymers crystallization processes. by Prof. Vincenzo CAPASSO (Universita' di Milano)
- 6. Local time and sample path properties of n-parameter processes. by Prof. Marc Dozzi (University of Nancy)

SEMINARS

A number of seminars will be offered during the Course.

LECTURE NOTES will be available as draft at the Course and will appear soon after in the CIME subSeries of the Springer-Verlag Lecture Notes in Mathematics.

APPLICATIONS

Those who want to attend should fill the following application form to CIME

Foundation Dipartimento di Matematica "U.Dini"

Viale Morgagni 67/a 50137 FIRENZE, Italy Tel +39-055-434.975 / 42.37.111 Fax +39-055-434.975 / 42.226.95 e-mail cime@math.unifi.it Web-page http://www.math.unifi.it/~cime

Application deadline: March 30, 2001. NO REGISTRATION FEES are due.

Lectures will be held at Martina Franca on July 2,3,4,5,6,7.

Participants are requested to register on July 1, 2001.

An important consideration in the acceptance of the application is the scientific relevance of the Course to the field of interest of the applicant.

Applicants are requested therefore to submit along with their application, a scientific curriculum and a letter of recommendation.

There is a chance of having your expenses partially covered by the European Community (EU).

The action of the programme is intended to support young scientists up to 35 years old. Researchers should be citizen of a member state of the EU or reside in such a state for at least one year. Please quote in the application the need of support and conditions for eligibility.

SITE

Martina Franca is a delightful baroque town made of white houses of Apulian spontaneous architecture. It is the major and aristocratic centre of the "Murgia dei Trulli" standing on a hill which dominates the well known Itria Valley, which is spotted with "trulli" typical dry stone houses of conical shape which go back to the 15th century. A masterpiece of the baroque architecture is the ducal palace where the Course will be hosted. Martina Franca belongs to the province of Taranto, one of the major centres of Magna Grecia, particularly devoted to Mathematics. Taranto houses an outstanding museum of Magna Grecia with fabulous collections of gold manufactures.

LODGING

Special rates are offered by Park Hotel San Michele (four star hotel):

- Lit. 75.000 full board for accommodation in double room
- Lit 105.000 full board for accommodation in single room

A lumped fee of Lit 50000 is due to the hotel for shuttle service from/to airports/rails.



