

CRA - SCA

Bari
Unità di Ricerca
per i Sistemi colturali
degli ambienti Caldo-Aridi



Società Italiana di Agronomia



European Society for Agronomy



Summer School

APPLICATION OF GEOSTATISTICS TO AGRICULTURE

Bari, 25 – 31 August, 2011

CRA, Research Unit for Cropping Systems in Dry Environments (SCA)

The Agricultural Research Council (CRA) and the Italian Society for Agronomy (SIA) organize a summer school on application of geostatistics to agriculture, with the sponsorship of the scientific societies operating within the Agriculture science.

The proposed summer school aims at updating current knowledge about the application of Geostatistics. After the basic elements for approaching the geostatistics, the course will focus on the environment and agriculture.

The school emphasis is on the formation of young researchers and doctoral students who will be able to investigate the agriculture sustainability by using an integrated approach. To this end, the school will bring together guest speakers who are highly qualified and selected for their experience in statistics applied to a spatial scale. The final objective of the school is to set the ground to form experts on precision farming. The participants will take a final exam (multiple choice test).

Application must be sent before 22 August 2011. The number of places available is 30.

Registration fee is 250 € to be paid through the SIA website (<http://www.siagr.org/pagamenti.asp>).

Rooms in Bari are reserved at Hotel Campus (Via Celso Ulpiani, 11-13) at the special price of 35€ (single room including breakfast). For hotel reservation: info@campushotel.it or antoniodesortis@gmail.com; Tel: +39 0805216280)

Organizing Committee:

CRA-SCA, Bari

Annamaria Castrignanò, Mariangela Diacono, Marcello Mastrorilli,
Giacoma Girone (giacoma.girone@entecra.it)

Program

Thursday 25 August, 2011

- 9:00 - 12:00 Assessment of spatial variation. Some revision of elementary statistics (*E. Barca*)
- 12:15 - 13:30 Computer Session on Basic Statistics
- 15:00 - 16:45 Nature of Spatial Variability. The importance of spatial variability in precision farming (*A. Castrignanò*)
- 17:00 - 18:00 Computer session on Exploratory Analysis



Monday 29 August, 2011

- 9:00 - 10:45 Multivariate geostatistics. Cokriging. Factor cokriging (*A. Castrignanò*)
- 11:00 - 12:00 Quantifying uncertainty for environmental pollution management in decision making (*F. Musci*)
- 12:00 - 13:00 “On-the-go Sensing?” Potentialities and limits in Variable Rate Application (*F. Morari*)
- 14:30 - 17:30 Computer Session on processing of multivariate data sets



Wednesday 31 August, 2011

- 9:00 - 10:30 Applications of Remote Sensing in Precision Agriculture (*V. Alchanatis*)
- 10:45 - 12:15 How spatial analysis may assist with area-wide integrated pest management? (*Y. Cohen*)
- 12:15 - 13:15 Searching for a Better Understanding of Eco-hydrological Processes Across Space-Time Scales: Experiences and Geostatistical Evaluations (*N. Romano*)
- 14:30 - 16:00 Proximal sensing in Precision Agriculture (*A. Mounem Mouazen*)
- 16:15 - 17:15 Discussion and Conclusion of the course



Friday 26 August, 2011

- 9:00 - 10:30 Analysis of Spatial Dependence. Development of Geostatistics. Variography (*A. Castrignanò*)
- 10:45 - 13:00 Computer Session on variogram modeling
- 14:30 - 16:30 Spatial interpolation. Ordinary Kriging and other types of kriging (*G. Buttafuoco*)
- 16:45 - 18:00 Computer session on production of thematic maps



Tuesday 30 August, 2011

Lectures from International speakers

- 9:00 - 10:45 Geostatistical applications for precision Agriculture (*M. Oliver*)
- 11:00 - 12:45 Geostatistical applications in environmental studies (*C. de Fouquet*)
- 14:00 - 15:30 Geostatistical software for spatial data analysis and environmental applications (*N. Jeannée*)
- 15:45 - 17:00 Sampling in pedological survey (*E. Costantini*)
- 17:00 -18:00 Discussion



Speakers:

- Eng. Victor Alchanatis, Agricultural Research Organization (ARO), Volcani Center
- Dr. Emanuele Barca, National Research Council (CNR), Water Research Institute (IRSA)
- Dr. Gabriele Buttafuoco, National Research Council (CNR), Institute for Agricultural and Forest Systems in the Mediterranean (ISAFOM)
- Dr. Annamaria Castrignanò, Agricultural Research Council (CRA), Unit for Cropping Systems in Dry Environments (SCA)
- Dr. Yafit Cohen, Agricultural Research Organization (ARO), Volcani Center
- Dr. Edoardo Costantini, Agricultural Research Council (CRA), Agrobiology and Pedology Research Centre (ABP)
- Prof. Chantal de Fouquet, Ecole des Mines (ParisTech), Centre de géosciences / Géostatistique
- Dr. Nicolas Jeannee, Consulting & Training Manager, Geovariances, Avon
- Prof. Francesco Morari, Padua University, Dipartimento Agronomia Ambientale e produzioni vegetali
- Dr. Abdul Mounem Mouazen, Cranfield University, Agricultural and Environmental Engineering
- Dr. Ing. Fausta Musci, Technical University of Bari, Dipartimento di Ingegneria Civile e Ambientale (DICA)
- Prof. Margaret Oliver, University of Reading, Geography and Environmental Science
- Prof. Nunzio Romano, Department of Agricultural Engineering and Agronomy, University of Naples Federico II

It would be a simple matter to describe the earth's surface if it were the same everywhere. The environment, however, is not like that: there is almost endless variety.

- Webster and Oliver (1990)

While the enabling technologies facilitate precision agriculture, it is the knowledge and understanding of variability and the extent that site-specific agronomic recommendations are available to manage this variability that make precision agriculture viable.

- Pierce & Nowak (1999)



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