

1907 - 2007 Centenario della nascita

Torino, 11–13 Aprile 2007

*Computer Experiments Versus Physical Experiments*

*Joint ENBIS-DEINDE 2007 Conference*

*Scientific Meeting in Honour of Diego de Castro*

*Dipartimento di Statistica e Matematica Applicata alle Scienze Umane “Diego de Castro” Università di Torino - Facoltà di Economia - P.zza Albarello 8 - Torino*

IX edizione del Convegno sui metodi statistici applicati alla ricerca industriale. L'appuntamento è finalizzato alla innovazione dei processi ed al miglioramento della qualità dei beni e servizi prodotti. Il tema di quest'anno, che vede la presenza di docenti e ricercatori di primo piano a livello mondiale, riguarda l'interrelazione fra la sperimentazione fisica e quella numerica, basata sullo sfruttamento di codici e modelli matematici. Quest'ultimo argomento è attualmente in continua e rapidissima evoluzione, data la crescente disponibilità a costi sempre più bassi, di calcolatori sempre più potenti e, al tempo stesso, l'incessante sviluppo di software dedicato in numerosi settori applicativi.

Durante il Convegno verrà commemorato nel centenario della nascita il Professor Diego de Castro (1907-2007), insigne docente e ricercatore di Statistica, fondatore dell'attuale Dipartimento di Statistica e Matematica Applicata alle Scienze Umane “Diego de Castro”, dove a lungo operò.

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## The ENBIS-DEINDE 2007

Conference aims to join people working on Design of Experiments and related fields.

DEINDE was first introduced in the early nineties as a forum for researchers and practitioners alike to discuss topics related to industrial experimentation. This conference is to join common areas of interest of DEINDE and ENBIS organizations. From this point of view, the ENBIS contribution can be seen as the ENBIS 2007 Spring Meeting.

The Conference intends to bring together both leading experts and researchers, thus creating a forum to cover recent progress and to stimulate exchanges among active researchers. It will also encourage informal contacts and discussions among participants.

The ENBIS-DEINDE 2007 Conference will be held on April 11-13, 2007 in Torino at the Department of Statistics & Applied Mathematics "Diego de Castro" (Piazza Arbarello, 8) and it is targeted at scientists, researchers and users of DoE techniques.

The conference is sponsored by European Network for Business and Industrial Statistics, Fondazione Franca e Diego de Castro, Politecnico of Torino, University of Torino and the Faculty of Economics of Torino.

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## **Programme Chair**

- Ron S. Kenett, University of Torino & ENBIS

## **Scientific Committee**

- Stefano Barone, University of Palermo, Italy
- Ron Bates, London School of Economics, United Kingdom
- Roberto Corradetti, University of Torino, Italy
- Raffaello Levi, Politecnico of Torino, Italy
- David M. Steinberg, Tel Aviv University, Israel
- Grazia Vicario, Politecnico of Torino, Italy
- Henry Wynn, London School of Economics, United Kingdom

## **Local Chair**

- Ennio Davide Isaia, University of Torino, Italy
- 11 April 2007: R. Levi, Welcome Address
- 11 April 2007: G. Vicario, Computer Experiments: Kriging Methodology and Sequential Designs
- 12 April 2007: G. Vining, Comments on the Use of Computer Experiments for Robust Design
- 13 April 2007: R. Kenett, Analysis of Computer Simulations: From DACE to MARS and GASP

## **List of all contributions**

- M. J. Alvarez, N. Gil-Negrete, L. Ilzarbe, M. Tanco, E. Viles and A. Asensio, A Computer Experiment application to the design and optimization of a capacitive accelerometer
- M. K. Ardekani and R. Noorossana, On the Robust Parameter Design
- S. Balci and A. D. Akkaya, Pairwise Multiple Comparisons Under Short-Tailed Symmetric Distribution
- G. Barbato, E. M. Barini, L. De Chiffre, R. Levi and G. Tosello, Optimization of a Complex Surface Measurement with Touch Probe CMM using the Design of Experiment
- E. M. Barini, M. De Maddis, S. Ruffa and G. Tosello, A DOE Approach for Robustness Analysis of Shape Recognition Statistical Method
- I. Ben-Gal and I. Priness, Evaluation of Gene Expressions Clusters via Information Theoretic Measure
- R. Berni, The Split-Plot Design and the Multiple Response Case
- A. O. Brochado and F. V. Martins, Determining the Number of Market Segments using an Experimental Design
- E. Carfagna and J. Marzialetti, Sequential Design in Quality Control and Validation of Land Cover Data Bases
- C. Cornalba, R. Kenett and P. Giudici, Sensitivity Analysis of Bayesian Networks with Stochastic Emulator
- A. De Luca and S. Ciapparelli, On the Conjoint Analysis: the Estimate of the Response Function with Main and Interaction Effects by Multivariate Regression
- L. Deldossi and D. Zappa, Some Improvements in Measurement Systems Capability Analysis
- J. Franco, L. Carraro, O. Roustant and A. Jourdan, A Radar-Shaped Statistic for Testing and Visualizing Uniformity Properties in Computer Experiments
- R. Furlan and R. Corradetti, A Hierarchical Bayes Allocation-Based Model for Healthcare

#### Research Projects

- J. Garroi, P. Goos and K. Sorensen, A Variable-Neighbourhood Search Algorithm for Finding Optimal Run Orders of Experimental Designs
- D. Ginsbourger, D. Dupuy, A. Badea, L. Carraro and O. Roustant, A Note on the Choice and the Estimation of Kriging Models for the Analysis of Computer Experiments
- C. Helbert and L. Carraro, Assessment of Uncertainty in Computer Experiments, from Universal Kriging to Bayesian Kriging
- H. Kracker and A. Busch, Robust Optimization of Computer Experiments
- R. Leardi, F. Paganelli and K. MacNamara, Applications of Experimental Design to Chemical and Food Industry
- J. Michalek, Testing statistical hypotheses about capability indices  $C_p$  and  $C_{pk}$
- W. G. Muller, Issues in the Optimal Design of Computer Simulation Experiments
- J. S. Park and N. A. Hwang, Model Selection Algorithm for Computer Experiments
- F. Pavese and D. Ichim, Design for Measurement Quality and Results Evaluation in the Calibration of Large Batches of Similar Artefacts by Computer-assisted Data Acquisition and Processing
- P. Pedone, D. Romano and G. Vicario, Kriging-Based Sequential Inspection Plans for Coordinate Measuring Machines
- P. Soleimani and R. Noorossana, Effect of Autocorrelation on the Performance of Linear Profiles
- G. Tosello, A. Gava, H. N. Hansen, G. Lucchetta and M. Guarise, Measuring Uncertainty Applied to Design of Experiment Analysis: a Micro Injection Moulding Case Study
- G. Vining, Comments on the Use of Computer Experiments for Robust Design
- P. Wissmann and M. Gallivan, Sequential Experimental Design of a CVD Process using Empirical and Mechanistic Models
- X. Xu, Robust Designs for Misspecified Exponential Regression Models

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#### DESIGN of EXPERIMENTS (DOE)

Models and Analysis, Optimal and Robust Design, Multiresponse and Multiobjective Optimization, Design for Measurement Quality, Applications in Process Control, Design for Six Sigma

#### COMPUTER EXPERIMENTS (CE)

Designing Computer Experiments, Metamodels and Emulators, Graphical Methods

#### CASE STUDIES AND APPLICATIONS

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