

NEWS

AWARDS

In the last five years the following staff members of IME-USP have been distinguished for their works and received awards:

- . Imre Simon, the 1989 UAP Award,
- . Julio M. Singer, the 1992 James E. Grizzle Distinguished Alumnus Award,
- . Junior Barrera, the 1993 Distinguished Doctoral Dissertation of USP,
- . Nami Kobayashi, the 1993 Nominee Distinguished Teacher of IME-USP, and
- . Pablo A. Ferrari, the 1993 Nominee Distinguished Researcher of the IME-USP.

V LATIN AMERICAN CONGRESS OF PROBABILITY AND MATHEMATICAL STATISTICS

The V Latin American Congress of Probability and Mathematical Statistics was held at Instituto de Matemática e Estatística of the Universidade de São Paulo, Brasil, from June 28th to July 3rd, 1993.

The Congress was jointly sponsored by the Bernoulli Society, the International Mathematical Union, the Inter-American Statistical Institute and the Brazilian Statistical Association.

It was supported by CNPq, FAPESP and FINEP (Brazil), International Center for Theoretical Physics (Trieste), Organização dos Estados Americanos, British Council, Bureau Régional de Coopération Française and local foundations of the participant countries.

During the Congress four short courses and 16 main conferences were given by international specialists of most important fields in probability and statistics. The four short courses were: "The stochastic Ising model", Prof. Richard Holley; "Ocurrence times of rare events.", Prof. A. Galves; "Comparative aspects of the analysis of stationary time series and of stationary point process", Prof. David R. Brillinger; and, "Computer-Intensive statistical methods", Profs. D. V. Hinkley and A.C. Davison. The conferences were: "Linear and non linear voter models", Prof. Enrique Andjel; "Statistical Mechanics of the Hopfield-model: some rigorous results", Prof. Anton Bovier; "Finite and infinite systems of interacting diffusions", Prof. J. Theodore Cox; "The versatility of the multivariate function", Prof. Chang Lee Dorea; "Renormalization transformations as a source of examples and problems in probability and statistics", Prof. R. Fernandez; "Random perturbations on dynamical systems with conservation laws", Prof. Mark Freidlin; "Stochastic inference for Gibbs distributions and applications to image processing", Prof. B. Guidas; "A challenge of NASA earth probe mission: how to measure rainfall from satellites when you can not ...", Prof. B. Kedem; "Robust

estimation in multivariate analysis", Prof. R. Maronna; "Quasi stationary distributions", Prof. S. Martinez; "Tunneling for the 20 dynamical ising model in the two phase region", Prof. F. Martinelli; "Bayesian analysis of discrete data", Prof. Carlos A. B. Pereira; "Multiple Wiener-Ito integral, a review", Prof. Victor P. Abreu; "State space models for censored data", Prof. R. L. Smith; and "Nonlinear wavelet methods for recovering signals and images from indirect, incomplete, noisy data", D. Donoho. Furthermore more than 90 researchers presented short communications about their research work.

The Conferences and Short Courses will be published in the second number of *Resenhas do Instituto de Matemática e Estatística da Universidade de São Paulo*. The accepted communications will be published in a special number of *Revista Brasileira de Probabilidade e Estatística* dedicated to the CLAPEM.

The total number of participants was 168, 43 students and 125 researchers and professors.

The Scientific Committee of V CLAPEM was composed by G. Cordeiro (Recife), C. Dorea (Brasilia), P. Ferrari (São Paulo) (chairman), A. Galves (São Paulo), R. Klein (Rio de Janeiro), M. Marques (Campinas), P. Morettin (São Paulo), G. Silveira (Rio de Janeiro), M. E. Vares (Rio de Janeiro), from Brazil and R. Fraiman (Uruguay), S. Martinez (Chile), E. Molina (Venezuela), L. Gorostiza (Mexico), V. Yohai (Argentina), representing the other Latin American Countries.

Among others, the following itens were treated in the Conferences, Short Courses and Short Communications:

Probability Interacting Particle systems and other special Markov processes, Metastability of stochastic and deterministic systems, Phase transition, Large deviations, Quasi stationary distributions, Reaction diffusion processes, Cellular automata, Statistics Time series, Robustness, Bayesian statistics, Non parametric estimation, Statistic models of epidemiology, Pivotal inference.

The participants considered the Congress had a great success due to its high quality and the good organization. The impact of the congress will be significant in the research and formation of specialists in probability and mathematical statistics in Latin America, as well as the collaboration of this region with other important centers around the world.

FORTHCOMING EVENTS AT IME

Semester on "Dynamical phase transitions", January to July 1994. Organizers: P. Ferrari, A. Galves, W. M. Oliva (supported by FAPESP "Projeto Tematico" No. 90 / 3918-5). For more information contact the organizers (galves@ime.usp.br)

MONOGRAPHS

Monographs published by staff members of the IME-USP, recently.

Integrability Problems in Hamiltonian Systems by Waldyr M. Oliva, (*Quaderni del Consiglio Nazionale Delle Ricerche, Grupo Nazionale di Fisica Matematica*, 1992).

The notes were prepared as a guide for the lectures of a fifteen hour course given in Ravello at the XVI Summer School on Mathematical Physics organized by the Italian CNR. The monograph contains the following sections: Hamiltonian systems, Euler-Lagrange equations, Canonical formalism and the Hamilton-Jacobi equation, Integrability and the Theorem of Arnold-Liouville, Symplectic actions of a group, Momentum map and reduction of the phase space, Persistence of tori and the statement of the KAM theorem, a Weierstrass criterion for the non-existence of invariant tori, the Vortex model in fluid mechanics and further questions on Integrability and non-integrability.

Waldyr M. Oliva is at the Departamento de Matemática Aplicada, Universidade de São Paulo, Brazil.

Large Sample Methods in Statistics -An Introduction with Applications Pranab K. Sen and Julio da Motta Singer (Chapman and Hall, New York).

Large Sample Methods in Statistics bridges the gap between sound theoretical development and fruitful methodological adaptations in practice by providing a solid justification for standard large sample theory but also provides access to more complex statistical models. Major emphasis is given to applications in such fields as biostatistics, public health, medical statistics, environmental sciences, industrial statistics, quality control, operations research and systems analysis, econometrics, management, psychometry, and sociology.

The basic concepts of stochastic convergence, convergence in distribution, convergence of moments, and the related results are laid down elaborately. The role of the sample distribution function and its intricate relation to order statistics is examined in the light of these concepts. Specific applications to large sample estimation theory and testing of statistical hypotheses both in traditional linear and categorical data models are considered along with an introduction to generalized linear models. Recent developments on weak convergence theory are outlined and their fundamental role in modern large sample theory is highlighted.

This book can be used as the basis of a one semester course for upper level undergraduates and graduates in statistics, biostatistics, and applied statistics. Researchers and professional will find it useful not only as a reference book but also as an essential resource on the theory needed to understand the methodology required for their work.

Contents: Preface; Objectives and scope; general introduction; Stochastic convergence; Weak convergence and central limit theorems; Large sample behavior

of empirical distributions and order statistics; Large sample theory in statistical inference; Large sample theory for categorical data models; Large sample theory for regression models; Invariance principles in large sample theory; References; Index.

Pranab K. Sen is at the Department of Biostatistics and Statistics, at the University of North Carolina. Julio da Motta Singer is at the Departamento de Estatística, Universidade de São Paulo, Brazil.

Prediction Theory for Finite Populations Heleno Bolfarine and Shelemyahu Zacks (Springer Series in Statistics).

A large number of papers have appeared in the last 20 years on estimating and predicting characteristics of finite populations. This monograph is designed to present this modern theory in a systematic and consistent manner. The authors' approach is that of superpopulation models in which values of the population elements are considered as random variables having joint distributions.

Throughout, the emphasis is on the analysis of data rather than on the design of samples. Topics covered include: optimal predictors for various superpopulation models, Bayes, minimax, and maximum likelihood predictors, classical and Bayesian prediction intervals, model robustness, and models with measurement errors.

Each chapter contains numerous examples as well as exercises that extend and illustrate the themes in the text. As a result, this book is ideal for all those research workers seeking an up-to-date and well-referenced introduction to the subject.

Heleno Bolfarine is at the Departamento de Estatística, Universidade de São Paulo, Brazil. Shelemyahu Zacks is at the Department of Mathematical Sciences, State University of New York.