WORKSHOP ON RISK ANALYSIS - March 9 and 10 IME-USP, Audutório Antonio Gilioli A247

March 9 (Monday) 10:00 - 13:00 and 16:00 - 18:00 10:00-13:00 Prof. NIKOLAI KOLEV (IME-USP): SHORT COURSE

Dependence Models Generated via Line Integral: The main goal of the course is to show the importance of the line integral for constructing multivariate continuous and discrete models taking into account the physical nature of the process, which is governed by the components of the hazard vector. The methodology will be illustrated by many examples.

16:00 - 18:00 INVITED TALKS

16:00 - 17:00 Prof. Dr. RUDI ZAGST (Technical Univ. of Munich, Germany) Explaining Aggregated Recovery Rates: This talk is based on a very broad database provided by the Global Credit Data, which includes defaults from 5 continents and over 120 countries. Dependence of monthly aggregated recovery rates (ARR) from bank loans on various macroeconomic factors is examined and sources of their variability are stated. In particular, an influence of stochastically estimated monthly growth of GDP USA and Europe is quantified. The behavior of the ARR is investigated using several regression models with unshifted and shifted explanatory variables in time. An application of a Markov switching model shows that the distribution of the ARR differs between crisis and prosperity times.

17:00 - 18:00 Prof. SABRINA MULINACCI (Bologna University, Italy)

Joint Life Insurance Pricing Using Delayed Effect Models: We introduce a model based on the Extended Marshall-Olkin methodology that allows for implicit shocks affecting the elements of the system. Properties of this new model are presented. We propose an empirical application to a sample of censored residual lifetimes of couples of insureds extracted from a data set of annuities contracts of a large Canadian life insurance company using the maximum likelihood technique.

March 10 (Tuesday): INVITED TALKS 10:00 - 12:00

10:00 - 11:00 Prof. GEORGIOS PITSELIS (University of Piraeus, Greece) Quantile Longitudinal Regression Model in the Framework of Loss Reserving Estimation With Correlated Line of Business: In the insurance practice, some regulation rules indicate that some changes over time occurred across the claim distribution. Here, we consider a loss reserving model for a non-life insurance portfolio consisting of several correlated run-off triangles that can be embedded within the quantile regression model for longitudinal data. The model proposes a combination of the between- and within-subportfolios (run-off triangles) estimating functions for regression parameter estimation, which take into account the correlation and variation of the run-off triangles.

11:00 - 12:00 Prof. MARCELO BOURGUIGNON (UFRN, Brazil)

A New Process for Modeling Count Time Series with Overdispersion: We define a first-order non-negative integer-valued autoregressive process with Poisson-geometric marginals based on binomial thinning for modeling integer-valued time series with overdispersion. The new process has, as a particular case, the Poisson INAR(1) and geometric INAR(1) processes. The main properties of the model are derived, such as probability generating function, moments, conditional distribution, higher-order moments, and jumps. Estimators for the parameters of process are proposed, and their asymptotic properties are established. Some numerical results of the estimators will be presented and applications to two real data sets will be discussed.