Venerdì 10 Gennaio 2014, Aula Picone

Remembering Peter Laurence and his Mathematics

PROGRAM:

14.00: Emanuele Caglioti (Direttore Dipartimento di Matematica, Sapienza Università di Roma): Opening talk

14.15: Renato Spigler (Università di Roma Tre)
A short scientific (and human) profile of Peter Laurence,

15.00: Marco Avellaneda (Courant Institute of Math. Sc., NYU,)
Managing the liquidity risk of portfolios of derivative securities: mathematical models, problems, and results,

16.00: Coffe break (Aula di Consiglio),

16.30: Sandro Salsa (Politecnico di Milano)
Obstacles and American Options: a work with Peter.

ABSTRACTS:

Marco Avellaneda (Courant Institute of Math. Sc., NYU)
"Managing the liquidity risk of portfolios of derivative securities: mathematical models, problems, and results"
Abstract: This is a review talk on the general problem of liquidity in risk-managment. Almost by definition, liquidity is the most important aspect of finance. Following the crisis of 2008, liquidity has been at the forefront of regulators' concerns and many proposals have been put forth to address the issue. Mathematically, the question can be stated as follows: how can we expand, or modify the Value-at-Risk (VAR) framework to incorporate liquidity? This talk presents models based on theoretical and empirical considerations, such as polling market participants, and looking at market volume statistics to anticipate liquidity needs upon default of a (large) financial counterparty. Solving these models leads to problems in deterministic or stochastic control which provide a quantitative foundation for taking liquidity reserves and for default-management procedures by exchanges and central counter parties.

Sandro Salsa (Politecnico di Milano)
"Obstacles and American Options: a work with Peter"
Abstract: Some years ago (say in 2007) Peter proposed me to work on a by now classical problem concerning a financial derivative product called American Option. The analysis from a mathematical point of view started mainly with Mc Kean and some issues, such as fine regularity properties of the so called free boundary, remained open.
In this talk I will try to present the main features of these type of financial contracts, emphazising the connection with the classical obstacle problem and to describe what kind of results we achieved with Peter.