

The Working Group on Risk - CREAR, with the support of the IDS dpt, Institut des Actuaire, Labex MME-DII and the group BFA (SFdS), has the pleasure to invite you to the Seminar by:

Dr. Gilles ZUMBACH

White Oak Asset Management, Genève - Switzerland

**April 28, 2017, 12:30pm – 1:30pm
EEE - ESSEC La Défense (CNIT) – Amphi 202**

Market risk methodologies, volatility, processes, and Backtesting

The core ideas underlying the evaluation of market risks are presented, with a focus on the large scale applications relevant for the industry. The main methodologies used in practice (historical, RiskMetrics, ...) are introduced, emphasizing the hypotheses used in the computations, the importance of various forecasts, and the practical limitations related to the risk evaluation of large portfolios. The relationships with ARCH processes and volatility forecasts are presented, with the implications regarding extreme events and fat-tailed distributions, as well as the long memory of the heteroskedasticity. The role of the time horizon used in the risk estimation is discussed, with a focus on risk horizons up to one year that are relevant for pension funds and insurances. Finally, the peculiarities of the backtest adapted to risk evaluation are presented, with a focus on long risk horizons. As an example, the application of a recent risk methodology to the DJIA over one century puts the 2007/2008 crisis in perspective.

Financial support from ESSEC Research Center and Labex MME-DII is gratefully acknowledged.



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Dr. Gilles ZUMBACH

White Oak Asset Management, Genève - Switzerland

Dr. Gilles Zumbach has been doing research on many topics in finance, ranging from tick-by-tick time series to risk evaluations, from realistic option pricing to large scale portfolios optimisation. He has worked for several institutions, including banks, hedge funds and service providers. He has published over 35 research papers in finance, most of them using careful data analyses combined with mathematical models. Gilles wrote a book published by Springer Verlag, linking fundamental research on time series to applications in finance. Recurring themes in his work are volatility and processes. In a former life, he was as a physicist.



Labex MME-DII
Modèles Mathématiques et Économiques de la
Dynamique, de l'Incertitude et des Interactions

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