



SCUOLA  
NORMALE  
SUPERIORE

Scuola Normale Superiore

Pisa

**Venerdì 20 giugno 2014**

**in Aula Bianchi dalle 11:00 alle 12:30 e dalle 14:00 alle 15:30**

**Dr. Luca Capriotti**

*EMEA head of Quantitative Strategies Global Credit Products, Credit Suisse*

Terrà un mini corso dal titolo:

## **“Real Time Risk Management with Adjoint Algorithmic Differentiation”**

### **Program:**

Adjoint Algorithmic Differentiation (AAD) is one of the principal innovations in risk management of the recent times. In this minicourse I will introduce AAD and show how it can be used to implement the calculation of price sensitivities in complete generality and with minimal analytical effort. The focus will be the application to Monte Carlo methods - generally the most challenging from the computational point of view. With several examples I will illustrate the workings of AAD and demonstrate how it can be straightforwardly implemented to reduce the computation time of the risk of any portfolio by order of magnitudes.

1. Pathwise Derivative Method
2. Algebraic Adjoint Approaches
3. Adjoint Algorithmic Differentiation (AAD)
4. AAD as a Design Paradigm
5. AAD and the Pathwise Derivative Method
6. First Applications
7. Case Study: Adjoint Greeks for the Libor Market Model
8. Correlation Risk and Binning Techniques
9. Case Study: Correlation Greeks for Basket Default Contracts