

The **October** meeting (**Meeting 2**) of the New South Wales Branch will be held on

**Tuesday, 20 October 2009**

6:00pm for refreshments and 6:30pm for talk

at

Seminar Room 024, New Law School Building, **University of Sydney**

## **Pavel Shevchenko**

### **CSIRO Mathematical and Information Sciences**

### **Quantitative modelling of financial risks**

Changes in information technology, globalisation, complex financial products and other factors expose financial industries to new risks. To ensure stability, new international regulatory frameworks (Basel II and Solvency II) have been developed for the banking and insurance industries. Currently, major financial institutions are undertaking quantitative modelling of risks to satisfy these requirements. A major component of financial risk is due to low probability but high consequence events. There are many unresolved problems associated with modelling such events, particularly for dependent events. Often expert opinions are used to supplement small datasets. Quantitative modelling in this area presents many challenges and different approaches are hotly debated. In this talk we discuss some statistical models used for modelling operational risk, credit risk, option pricing, commodities, claims reserving in insurance; and associated numerical techniques such as Markov chain Monte Carlo algorithms. We advocate the use of Bayesian inference method for risks where combination of several data sources (e.g. relevant external data, bank's internal data and expert opinions) is required. The method is also convenient to account for the model parameter uncertainty (often ignored in the current practices) in quantification of the capital requirements leading to an unpleasant increase of a bank capital.

Dr Pavel Shevchenko is a Principal Research Scientist in the Division of Mathematical and Information Sciences, CSIRO Australia. In CSIRO, he is leading research and commercial projects in the area of financial risk, in particular: modeling market, credit and operational risks; option pricing; insurance; development of relevant numerical methods and software; [www.cmis.csiro.au/Pavel.Shevchenko](http://www.cmis.csiro.au/Pavel.Shevchenko).

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## GETTING THERE

### By Train from Redfern station

Follow the path shown in the map

### By Train from Central station

Take bus (422, 423, 426, 428) to Wentworth Building on City Road OR

Take bus (other routes) to USYD entrance on University Avenue from Parramatta Road

### By Car

Parking at Camperdown and Darlington Campuses: \$ 6 flat rate (from 3pm – 6am)

– underground parking at the New Law School Building is available (entrance on Barff Road)