SEMINAR OF
ACTUARIAL AND FINANCIAL MATHEMATICS

organized by Quantact, the CRM Laboratory of Actuarial and Financial Mathematics

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2920, Chemin de la tour
Pavillon André-Aisenstadt, Université de Montréal
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Hedging with Uncertainty-Averse Preferences

We study the pricing and hedging of derivative securities with uncertainty about the volatility of the underlying asset. Rather than taking all models from a prespecified class equally seriously, we penalise less plausible ones based on their "distance" to a reference local volatility model. In the limit for small uncertainty aversion, this leads to explicit formulas for prices and hedging strategies in terms of the security's cash gamma. If the reference model is a Black-Scholes model which is dynamically recalibrated to the market price of a liquidly traded vanilla option, delta-vega hedging is asymptotically optimal. The corresponding indifference price corrections are then determined by the disparity between the vegas, gammas, vannas, and volgas of the non-traded and the liquidly traded options.

This talk is based on joint works with Johannes Muhle-Karbe and Frank Seifried.

Website: http://quantact.uqam.ca/index_en.html