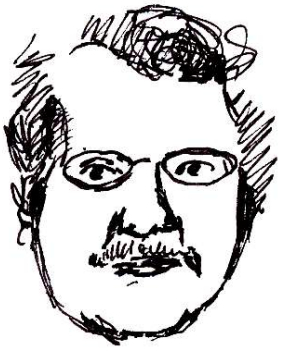
WORKSHOP
2003-Nov-13

Bernt Øksendal

The optimal Portfolio

$$\pi_i^* \sim \frac{B(T) - B(s)}{T - s}$$

for an Insider has a more sensitive dependency on ~~the~~ stock price.



We used Sparse Grids to solve PDEs in up to 8 dimensions.

Joerg Kampen

Lévy PDE:

$$\frac{\partial f}{\partial t} + L^* f + r\frac{\partial f}{\partial s} = 0$$

with

$$Lf = \frac{\sigma^2}{2}\left(\frac{\partial^2 f}{\partial x^2} - \frac{\partial f}{\partial x}\right) +$$

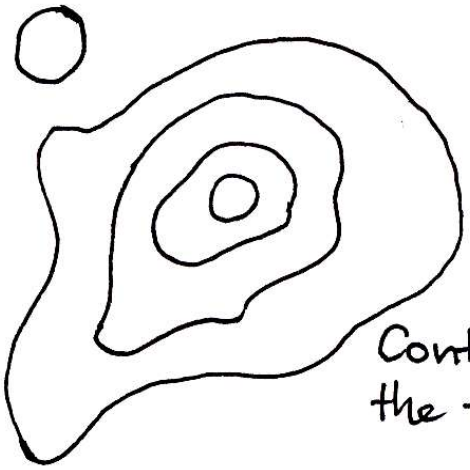
$$\int \nu dy \left[f(x+y) - f(x) - (e^y - 1)\frac{\partial f}{\partial x}(x)\right]$$

Rama Cont

The value of a credit derivative depends heavily on the chosen copula.

Christian Bluhm (HVB)

Rüdiger Kiesel



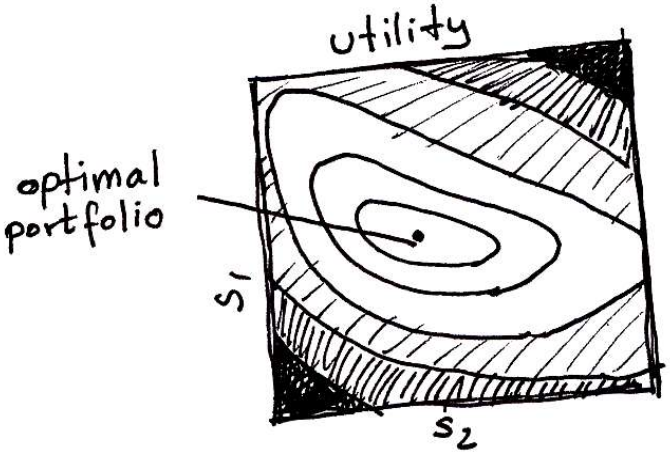
Contour plot of the tail dependence.

Schmid & Zagst model

Default rates:
- correlated to GDP
- mean reverting

Rudi Zagst

Bertram Duering

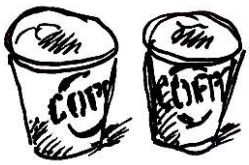


2nd DAY

2003 - Nov - 14

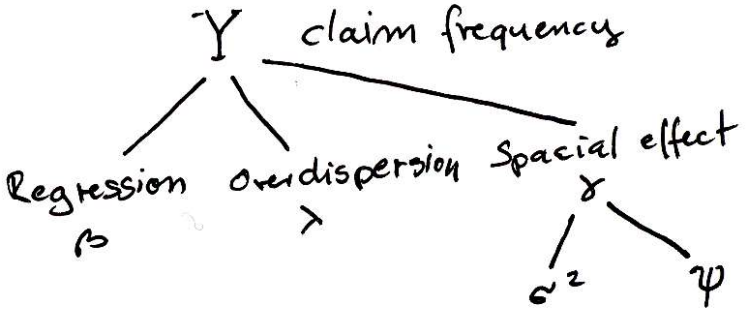
Sven de Vries

ascending auction for multiple goods:
1) auctioneer anounces price
2) bidders reveal demand
3) auctioneer raises prices until demand equals supply



Two coffees are sold to the audience in an ascending auction

Susanne Gschlößl



Sparse matrices
- band matrices (width b)
- envelope matrices (local width)

Algorithms
Cholesky $O(n^3) \rightarrow O(nb^2)$
Linear equations $O(n^2) \rightarrow O(nb)$
Multiplication $O(n^3) \rightarrow O(nb)$

Thomas Kneip

John
Schoenmakers

MC Simulation of
MC Simulation

$$V_0 = B(0) \cdot \inf_{Q>0} \mathbb{E}^{Q} \max_{\tau} \frac{C(T_\tau)}{B(T_\tau)}$$

Christoph Kühn

Israeli Option:
Both, issuer and
buyer, can excercise
the option at different
strike prices
Example:
Convertable callable
bond

Jan Kallsen

Variance optimal hedging
under Lévy processes