ID de Contribution: **79**   Type: **Non spécifié**

On the Entropie Minimal Martingale Measure for Lévy Processes

vendredi 31 août 2018 11:20 (30 minutes)

We consider a geometric Lévy market with asset price $S_t = S_0 \exp(X_t)$, where X is a general Lévy process on (Ω, F, P), and interest rate equal to zero. As it is well known, except for the cases that X is a Brownian motion or a Poisson process, the market is incomplete. Therefore, if the market is arbitrage-free, there are many equivalent martingale measures and the problem arises to choose an appropriate martingale measure for pricing contingent claimes.

One way is to choose the equivalent martingale measure Q_* which minimizes the relative entropie to P, if it exists. Another choice is the famous Esscher martingale measure Q_E, if it exists.

The main objective of the present talk is to discuss a simple and rigorous approach for proving the fact that the entropie minimal martingale measure Q_* and the Esscher martingale measure Q_E actually coincide: $Q_* = Q_E$. Our method consists of a suitable approximation of the physical probability measure P by Lévy preserving probaility measures P_n.

The problem was treated in several earlier papers but more heuristally or in a sophisticated way.

Summary

Orateur: ENGELBERT, Hans-Jürgen (Friedrich Schiller-University of Jena, Institute of Mathematics)