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Title: On Stochastic Exponentials for Continuous Local Martingales

Abstract:

We will consider stochastic exponentials $(Z,\mathbb{F})$ of continuous local martingales $(X,\mathbb{F})$ on a probability space $(\Omega,\mathcal{F},P)$. It is well-known that $(Z,\mathbb{F})$ is again a continuous local martingale. For the (locally) equivalent change of probability measure and related questions, it is of great importance to know effective conditions under which $(Z,\mathbb{F})$ is a martingale or even a uniformly integrable maringale. In the last decades, many authors gave contributions to this problem. The aim of the present talk is to give \textit{necessary and sufficient} conditions in terms of the associated increasing process A and another probability measure Q locally equivalent to P. The conditions are of type of the behaviour of the paths of A Q-a.s. For this purpose, we introduce a certain canonical setting for continuous local martingales. Our results will be illustrated by several examples.