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Titel des Beitrags: Integrability conditions for space-time stochastic integrals: Theory and applications
Abstract: We derive explicit integrability conditions for stochastic integrals taken over time and space driven by a random measure. Our main tool is a canonical decomposition of a random measure which extends the results from the purely temporal case. We show that the characteristics of this decomposition can be chosen as predictable strict random measures, and we compute the characteristics of the stochastic integral process. We apply our conditions to a variety of examples, in particular to ambit processes, which represent a rich model class.
Stichworte: ambit process, continuous-time moving average, integrability conditions, L\'evy basis, martingale measure, predictable characteristics, random measure, stochastic integration, stochastic partial differential equation, supCARMA, supCOGARCH, supOU, Volterra process
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