ON PURELY DISCONTINUOUS ADDITIVE FUNCTIONALS OF SUBORDINATE BROWNIAN MOTION

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Abstract: Let $A_t = \sum_{s \leq t} F(X_{s-}, X_s)$ be a purely discontinuous additive functional of a subordinate Brownian motion $X = (X_t, \mathbf{P}_x)$. In this talk I will describe a sufficient condition on the non-negative function F that guarantees that finiteness of A_∞ implies finiteness of its expectation. This result is then applied to study the relative entropy of $\mathbf{P}_x$ and the probability measure induced by a purely discontinuous Girsanov transform of the process X. These results are proved under the weak global scaling condition on the Laplace exponent of the underlying subordinator.