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INTEGRABILITY OF STABLE PROCESSES

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Abstract: We give necessary and sufficient conditions for $\int_T |X(t)|^p \nu(dt) < \infty$ a.s. where $p > 0$, $\{X(t), t \in T\}$ is an α-stable process, $0 < \alpha < 2$, and ν is a σ-finite measure. We establish the tail behavior of the distribution of the above integral, and we prove a Fubini-type theorem which justifies a change of order of ordinary integration and stochastic integration with respect to a stable random measure.

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