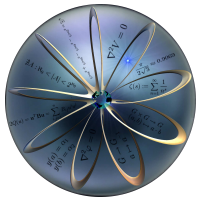

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properties of X-integrable processes

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Let X be a semimartingale. Then a predictable process ξ is X-integrable if the stochastic integral $\int \xi \, dX$ is defined, which is equivalent to the set

$$\left\{ \int_0^t \alpha \, dX : |\alpha| \leq |\xi| \text{ is predictable} \right\}$$

being bounded in probability, for each $t > 0$. We list some properties of X-integrable processes.

1. Every locally bounded predictable process is X-integrable.

2. The X-integrable processes are closed under linear combinations. That is, if α, β are X-integrable and $\lambda, \mu \in \mathbb{R}$, then $\lambda\alpha + \mu\beta$ is X-integrable.

3. If $|\alpha| \leq |\beta|$ are predictable processes and β is X-integrable, then so is α.

4. A process is X-integrable if it is locally X-integrable. That is, if there are stopping times τ_n almost surely increasing to infinity and such that $1_{\{t \leq \tau_n\}} \xi_t$ is X-integrable, then ξ is X-integrable.