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INTÉGRALES STOCHASTIQUES DE PROCESSUS ANTICIPANTS ET PROJECTIONS DUALES PRÉVISIBLES

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Abstract

We define a stochastic anticipating integral δ^μ with respect to Brownian motion, associated to a non adapted increasing process (μ_t), with dual projection t. The integral $\delta^\mu(u)$ of an anticipating process (u_t) satisfies: for every bounded predictable process f_t,

$$E\left[\left(\int f_s\, dB_s\right)\delta^\mu(u)\right] = E\left[\int f_s u_s\, d\mu_s\right].$$

We characterize this integral when $\mu_t = \sup_{t\le s\le 1} B_s$. The proof relies on a path decomposition of Brownian motion up to time 1.

Keywords. Stochastic anticipating integral, dual projection, path decomposition, balayage formula.