

Constructing the Itô Integral

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Motivation

IMAGES OF STOCHASTIC CALCULUS APPLICATIONS GO
HERE

Lagrangian transport

$$\frac{dx}{dt} = u(x, t)$$

$$dy_t = u(y_t, t) dt + \sigma(y_t, t) dW_t,$$

$$y_t = y_0 + \int_0^t u(y_\tau, \tau) \, d\tau + \int_0^t \sigma(y_\tau, \tau) \, dW_t.$$

$$\int_0^t \sigma(y_\tau, \tau) \mathrm{d}W_t$$

Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be a deterministic function.

References



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