ELEC 697: Homework Oct. 15, 1998

(Correlations of stochastic integrals) Show that

$$\mathbb{E}\left[\int f(t,\omega)\,\mathrm{d}B_t(\omega)\int g(t,\omega)\,\mathrm{d}B_t(\omega)\right]=\mathbb{E}\left[\int f(t,\omega)g(t,\omega)\,\mathrm{d}t\right].$$

Hint: Use the fact that correlations can be expressed using variances.

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