

In-tutorial exercise sheet 3

supporting the lecture on Malliavin Calculus

(Discussion in the exercise group on May 24, 2017, 2:15 p.m.)

Exercise 5.

Use Lemma 3.4 to show that the Malliavin derivative is well-defined.

Exercise 6.

Let $H = L^2((0, \tau], \mathcal{B}_{(0, \tau]}, \lambda)$ and let W be the corresponding Brownian motion on $(0, \tau]$. Compute DX for the following random variables:

- (a) $X = \int_0^\tau f(s) dW(s)$;
- (b) $X = \exp(W(t))$ for some $0 < t < \tau$.