

# Regularizing properties for transition semigroups and semilinear parabolic equations in Banach spaces

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## Abstract

We study regularizing properties for transition semigroups related to Ornstein Uhlenbeck processes with values in a Banach space  $E$  which is continuously and densely embedded in a real and separable Hilbert space  $H$ . Namely we study conditions under which the transition semigroup maps continuous and bounded functions into differentiable functions. Via a Girsanov type theorem such properties extend to perturbed Ornstein Uhlenbeck processes. We apply the results to solve in mild sense semilinear versions of Kolmogorov equations in  $E$ .

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