Unité de Probabilités

Conférence de Prof. S. Cerrai

EPFL > Faculté SB > IMA > PROB & PRST > Séminaires > Mercredi 16 mars - Prof. Sandra Cerrai
french only

SÉMINAIRE DE PROBABILITÉ

Mercredi 16 mars 2005 à 16h15
MA 12, EPFL, Ecublens

Prof. S. Cerrai

Università di Firenze

On the Smolukowski-Kramers approximation for a class of stochastic partial differential equations

Résumé

We show that the solution of the semi-linear stochastic damped wave equation

$$\mu u_{tt}(t,x)=\Delta\, u(t,x)-u_t(t,x)+b(x,u(t,x))+QW(t),$$

$u(0)=u_0$, $u_t(0)=v_0$, endowed with Dirichlet boundary conditions, converges as μ goes to zero to the solution of the semi-linear stochastic heat equation

$$u_t(t,x)= \Delta u(t,x)+b(x,u(t,x))+QW(t),$$

$u(0)=u_0$, endowed with Dirichlet boundary conditions. Moreover we consider relations between asymptotics for the heat and for the wave equation. More precisely, we show that in the gradient case, the invariant measure of the heat equation coincides with the stationary distributions of the wave equation, for any $\mu>0$.

Compléments

Annonce officielle

Lien MathSciNet

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