



Stochastic PDEs & Applications

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ABSTRACT

In this work we study two types of environmental noise through stochastic partial differential equations. More precise we consider a combination of Cahn-Hilliard and Allen-Cahn type operators with a multiplicative, white, space-time noise of unbounded diffusion. This is the Cahn-Hilliard/Allen-Cahn stochastic equation. This model is motivated by a simplified mesoscopic physical model for phase separation. It describes pattern formation due to adsorption and desorption mechanisms involved in surface processes, in the presence of a stochastic driving force. The next model is the Heat Equation with a non-smooth noise in the sense of Walsh, posed in a moving boundary domain with velocity given by the Stefan condition. This model structures a random financial environment related to the limit order book sense.

REFERENCES

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