

Mathematical models for phase change problems with hysteresis effect

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Abstract

The paper deals with a phase change problem which includes hysteresis effect. The system under consideration could be applied to various biological models by choosing appropriate conditions. Numerical simulations of the behaviour of solutions are presented.

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1. Introduction

In this paper, we consider the following system

$$\Theta_t + u\Theta_x - \kappa\Theta_{xx} + \text{div}_{K(u)}(\Theta) \ni \mathbf{F}(\Theta, u) \quad \text{in } (0, T) \times (0, 1), \quad (1)$$

$$u_t - u_{xx} = h(\Theta, u) \quad \text{in } (0, T) \times (0, 1), \quad (2)$$

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Mathematical Models For Phase Change Problems

Clemens Wendtner



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