

Stability of fronts in bidomain models

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Abstract

The bidomain equations are important mathematical models in the study of cardiac electrophysiology. They are used in the numerical emulation of various electrophysiological activities of hearts. Despite their importance in such applications,

very little is known theoretically about the qualitative properties of bidomain models in general.

In this talk, I will discuss the stability of fronts arising in the bidomain Allen--Cahn type equations and show some examples in which flat planar fronts collapse in a peculiar manner.

Research area(s): Nonlinear partial differential equations