

# Riccati-based feedback control of the monodomain equations

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## **Abstract**

We discuss feedback control strategies for the monodomain equations arising in cardiac electrophysiology. The governing system is described by a semilinear reaction-diffusion equation of FitzHugh-Nagumo type that is coupled to a linear ODE. Our goal is to determine a feedback law that locally exponentially stabilizes the system with respect to a given stationary solution. We show that for a distributed control acting on the PDE, it suffices to solve the operator Riccati equation arising for the linearized decoupled system in order to ensure local exponential stability for the complete system.