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A analysis of a biosensor model

We analyze a nonlinear biosensor model involving a parabolic equation with Robin boundary condition and an ODE. The existence and uniqueness of the solution is obtained by topological methods. The long-time behavior and system case are also discussed. A finite volume method is applied and convergence, stability and error estimates, and some numerical simulations are obtained for the approximate solution.

The work is done with Dr. Allegretto Walter and Dr. Lin Yanping.