Reaction-diffusion models of growing plant tips: bifurcations on hemispheres

Wayne Nagata

nagata@math.ubc.ca
University of British Columbia

We study two chemical models for pattern formation in growing plant tips. The models are two-morphogen reaction-diffusion systems on the surface of a hemispherical shell, with Dirichlet boundary conditions. Bifurcation analysis shows that both models give possible mechanisms for dichotomous branching in the plant tips. Symmetries in the models are used in the analysis.