

Bifurcation to locked fronts in two component reaction-diffusion systems

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In this presentation, we study invasion fronts and spreading speeds in two component reaction-diffusion systems. More specifically, we construct traveling front solutions and show the existence of a bifurcation to locked fronts where both components invade at the same speed. Expansions of the wave speed as a function of the diffusion constant of one species are obtained. The bifurcation can be sub or super-critical depending on whether the locked fronts exist for parameter values above or below the bifurcation value. Our existence proof relies on an adaptation of Lin's method. This is joint work with Matt Holzer.