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Traveling wavefronts for the Belousov-Zhabotinsky system with non-local delayed interaction

This talk presents a novel investigation into propagation dynamics of the Belousov-Zhabotinsky system with non-local delayed interaction, which exhibits dynamical transition structure from bistable to monostable. We address the enduring open problem on the existence, uniqueness and the speed sign of the bistable traveling waves. In the monostable case, we introduce new results for the minimal wave speed selection, which, as an application, further improved the existing investigations on pushed and pulled wavefronts. Our results can provide new estimate to the minimal speed as well as to the determinacy of the transition parameters. Moreover, these results can be directly applied to standard localized models and delayed reaction diffusion models by choosing appropriate kernel functions.