

Abstract Submitted
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Reaction-Diffusion Waves and Obstacles: Influence on Wave Speed ALEXANDER GOULD, NIKLAS MANZ, College of Wooster — We analyzed the effect of various sized rhombuses and elliptical obstacles on the propagation speed of reaction-diffusion waves. Through numerical simulations with a cellular automaton we found that the obstacle size has an influence on the wave speed of the reaction diffusion waves whereas no difference was found between rhombuses and ellipses of the same size. To create simulations similar to real wave behavior of the chemical model system, the Belousov-Zhabotinsky reaction, required operations with the standard, squared-cell cellular automata method which seemed to be non-physical. Therefore, we introduced a hexagonal structure to produce results which are more physically accurate to be comparable with planned experimental work.

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