Abstract Submitted
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Marangoni patterns N. NIRMAL THYAGU, Postdoctoral associate, Dept. of Biomedical Engineering, Rutgers University, Piscataway, NJ, EVELYN STROMBOM, DANIEL PALUMBO, undergraduate, CARLOS CAICEDO, TROY SHINBROT, Professor of Biomedical Engineering, Rutgers University, Piscataway, NJ — We study Marangoni patterns that emerge when common food dye is dropped into a dish of shallow water. These patterns consist of tendrils and spots that sharpen over time before eventually fading. We demonstrate that the patterns can be modeled using coupled reaction-diffusion equations, where the "reaction" terms appear due to a nonlinear dependence of surface tension on dye concentration. We show using a spatio-temporal metric that these patterns are distinct from previously described Turing patterns.

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