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Propagation of light-sensitive reaction-diffusion waves in inhomogeneously illuminated systems[1] DANIEL BLAIKIE, College of Wooster, SPENCER KIRN, College of William and Mary, NIKLAS MANZ, College of Wooster — The propagation dynamics of reaction-diffusion (RD) waves in illuminated quasi-2-dimensional systems was investigated, using various light-sensitive chemical Belousov-Zhabotinsky (BZ) reactions. Illuminating the BZ waves from below with visible light with a checkerboard pattern was used to change the light intensity in a repeating pattern, thus changing the speed of the light-sensitive waves. In our system, BZ waves slow down at higher illumination levels. Using a Ruthenium based catalyst, a light-sensitive BZ solution was made and absorbed by a filter paper to create the quasi-2D system. As the wave propagated over the checkerboard pattern of the illuminated system, the changes in speed would cause the wave to curve forward (dark area) and backward (bright area). The curvature should alternate and increase the overall speed of the wave as shown numerically by Schebesch and Engel in Phys. Rev. E **60**(6) 1999. We used various catalysts, light intensities, illumination patterns, and BZ-component concentrations to determine how different excitation waves propagate through non-homogeneous excitation pattern.

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