Effects of Advection on Reaction-Diffusion Waves[1] JERSSON
PACHAR, Wittenberg University, NIKLAS MANZ, The College of Wooster —
A quasi-one-dimensional reaction-diffusion-advection system is created by placing
the classic model system for reaction-diffusion (RD) waves, the chemical Belousov-
Zhabotinsky (BZ) reaction, in a syringe-capillary system. These RD waves are pure
concentration profile changes of a specific chemical compound, without any mass
transport in the solution. After initiating BZ waves at the open end of the cap-
illary, BZ solution is pushed into the capillary against the direction of the wave
propagation. By varying the advection velocity of the fluid (v_{adv}), we observed its
effect on the propagating speed of the BZ waves (v_{wave}) and created, under certain
conditions, quasi-one-dimensional standing waves. In this case, $v_{\text{adv=v}_{\text{wave}}}$ and the
'moving' wave seems to stand still within the capillary.

Jersson Pachar
Wittenberg Univ

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