

Abstract Submitted
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Simulations of the Reaction-Diffusion System demonstrating the increase in Spatial Variation of the Location of Phase Slips with increasing System Length¹ THOMAS OLSEN, YUNJIE ZHAO, ANDREW HALMSTAD, Lewis & Clark College, Portland, OR, RICHARD WIENER, Pacific University, Forest Grove, OR — The Reaction-Diffusion model² has been applied to a wide variety of pattern forming systems. It correctly predicted a period doubling cascade to chaos in Taylor-Couette flow with hourglass geometry³. We have extended previous calculations to systems possessing a greater variety of lengths. We show that a modest doubling of length extends the region of phase slips (formation of Taylor Vortex pairs) from the length of one vortex pair to seven, while quadrupling only increases it to the length of eight.

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²H. Riecke and H.-G. Paap, *Europhys. Lett.* **14**, 1235 (1991).

³Richard J. Wiener *et al*, *Phys. Rev. E* **55**, 5489 (1997).

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