

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Experimental and theoretical evidence for fluctuation driven activations in an excitable chemical system**<sup>1</sup> HAROLD HASTINGS, SABRINA SOBEL, Hofstra University, RICHARD FIELD, University of Montana, SCOTT MINCHENBERG, NICOLE SPINELLI, KEITH ZAUDERER, Hofstra University — An excitable medium is a system in which small perturbations die out, but sufficiently large perturbations generate large “excitations.” Biological examples include neurons and the heart; the latter supports waves of excitation normally generated by the sinus node, but occasionally generated by other mechanisms. The ferriin-catalyzed Belousov-Zhabotinsky reaction is the prototype chemical excitable medium. We present experimental and theoretical evidence for that random fluctuations can generate excitations in the Belousov-Zhabotinsky reaction. Although the heart is significantly different, there are some scaling analogies.

<sup>1</sup>This material is based upon work supported by the Department of Energy under Award Number DE-FG02-08ER64623.

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Date submitted: 21 Nov 2010

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