

1092-35-55

Roger Lui* (rlui@wpi.edu), Department of Mathematics, WPI, 100 Institute Road, Worcester, MA 01609. *Variational Method in the Study of Reaction-Diffusion Equations.*

The purpose of this talk is to demonstrate how a variational approach may be used to obtain many of the known results of scalar reaction-diffusion equations. It turns out that traveling wave solutions of such equations correspond to minima of the functional. By solving the Euler-Lagrange equation, one can find, or estimate, the minimum wave speed, which is the same as the asymptotic speed of propagation of solutions of the reaction-diffusion equations. Convergence to traveling wave solutions will also be considered. This is an ongoing joint work with Professor Hirokazu Ninomiya from Meiji University, Japan. (Received July 22, 2013)