# Nonlinear Stability of Travelling Wavefronts in An Population Model

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**Abstract**

This talk will focus on the study of a time-delayed reaction-diffusion equation of age-structured single species population. we extend the previous result to the nonlinear stability by using the technical weighted-energy method, when the initial perturbation around the wavefront decays to zero exponentially as $x \to -\infty$, but the initial perturbation can be arbitrarily large on other locations. The exponential convergent rate (in time) of the solution is obtained. Numerical simulations are carried out to confirm the theoretical results, and the travelling wavefronts with a large delay term in the model are reported.