DEPT OF MATHEMATICS AND STATISTICS • COLLOQUIA 2011–12

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Phase planes, traveling waves and delay equations

ABSTRACT

In the first half of this talk I will introduce the idea of the phase plane and discuss a mathematical model of the pendulum. In the second half of this talk I will introduce the idea of spatial dynamics by describing the surprising connection between the pendulum and transport phenomenon in a general mathematical model of population ecology, nerve impulses, and materials science. In the third half of the talk I will discuss joint work with Ben Kennedy ('98) in which we used ideas from spatial dynamics to analyze a class of spatially- discrete models.

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