



Hamilton Institute

Modelling Environmental Fluctuations in Biochemical Systems

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Abstract:

Stochasticity is an essential ingredient of complex behaviours in biological systems. I introduce a theoretical framework to model environmental stochastic fluctuations in metabolic networks. Non-trivial effects are predicted at both the kinetic and systemic levels of description.

In particular I propose the concept of control by noise as a way of tuning the systemic behaviour of metabolisms. This rests on a generalisation of standard Metabolic Control Analysis when external fluctuations are considered, which is based upon proper extensions of the Summation Theorems for flux and concentration control coefficients. Finally I will discuss some applications and plans for future research.

Venue: Seminar Room, Hamilton Institute, Rye Hall, NUI Maynooth

Time: 1.30 - 2.30pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

