ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Institut de Mathématiques.

Groupe Probabilités.

SÉMINAIRE DE PROBABILITÉS

Mercredi 10 Septembre 2003 à 9h15.

salle MA 12, 1er étage FSB-IMA-E.P.F.L., Ecublens

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Mathematical Analysis of Interacting Gene Expression Systems

Abstract

The fate of a cell is determined, on a rough first approximation, by the dynamics of its gene expression profiles. Analysis of the corresponding dynamical system, at least in a simple enough biological setting, is possible nowadays exploiting new biochemical technologies (cDNA microarrays) and associated mathematical and computational tools.

The long term goal of this project is to contribute to the understanding of some of those interacting gene expression systems, mainly those associated to cancer. This is a collaboration with the Ludwig Institute for Cancer Research.

Most of our effort up to now has being understanding how to go from raw microarray data (a binary image) to gene expression estimators, suitable to compare with theoretical model predictions, and associated pattern recognition issues.