



CENTRE DE RECERCA MATEMÀTICA

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Structural features of RNA phenotype networks and its effects on biological evolution

Abstract:

I will present a number of structural properties of RNA phenotype landscapes obtained by studies in-silico of spaces of sequences of length L . First, I fully characterize the phenotype network which arises from folding all the 4^L different sequences for $L=12$. Quantities such as adjacency relationships, number of components and neutral sets sizes are described. Then, we explore possible characterisations for phenotypes of larger lengths. To do so we invoke combinatorics, biological constraints and sampling techniques to estimate the neutral sets sizes and connectivity patterns of the resultant landscapes. Finally, we briefly present and discuss results of comparing dwelling times of evolutionary trajectories generated by point mutations and predictions extracted from the sampled data.

Date: June 9, 2015

Place: Room C1/028

Time: 12:00

