

Theoriekolloquium

Am **20.05.2010** um **14.15 Uhr** in **W2 1-143** hält

Herr Prof. Dr. J. Krug (Uni Köln)

einen Vortrag mit dem Titel

Statistical topography of empirical fitness landscapes

The adaptive evolution of a biological population is governed by the structure of the underlying fitness landscape, which encodes the interactions between different mutations in their effects on fitness. After decades of work devoted to the mathematical modelling of fitness landscapes, empirical fitness data are now becoming available for single genes as well as on the organismic level. Such studies have shown that adaptive processes are often remarkably constrained, in the sense that only a small fraction of the possible evolutionary pathways connecting two genotypes are accessible to a dynamics which requires fitness to increase in each mutational step. Here we investigate the statistical properties of selectively accessible paths for different models of random fitness landscapes. We identify several generic features of the distribution of the number of accessible paths and study its variation with the size of the genotype space. The theoretical predictions are compared to an empirical data set of fitness values for the asexual fungus *Aspergillus niger*. The talk is based on joint work with Jasper Franke, Su-Chan Park and Arjan de Visser.

Interessierte sind herzlich eingeladen.

gez. Prof. Dr. Andreas Engel