MA04-017 - Mathematics and Evolution: Mathematical and Statistical Analysis of Ecological and Genetic Diversity

Abstract

Mathematical models and statistical methods shall be developed to gain new insights into central processes of evolutionary diversification. The models will combine and extend topical advances in adaptive dynamics theory and multilocus population genetics. Their analysis will lead to improved understanding of the evolutionary mechanisms generating and maintaining ecological and genetic diversity. The statistical methods will capitalize on these new mathematical models and on other developments in the current literature. They will focus on the functional characterization of genomic regions in natural variants that were recently exposed to selection. The methods will be applied to data from natural populations of Drosophila that have colonized new environments.

Keywords:
population genetics, adaptive dynamics, genetic diversity, statisticaltests, selection mapping

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Further links to the persons involved and to the project can be found under
https://wwtf.at/funding/programmes/past/ma/MA04-017/