Mutation-selection stationary distribution in structured populations

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In this talk, we address the evolution of finite and structured populations including two types of species. The evolutionary dynamics of the system is governed by the Moran process with constant fitnesses in the presence of the mutation. We obtain the stationary distribution in a number of topologies. We also approximate the mixing time, i.e., the time that the system needs to reach its stationary distribution. It is observed that the mean frequency of a species in the stationary distribution is approximately independent of the population structure, and the mixing time has a power law behavior with respect to the population size whose exponent is closely related to the population structure. The obtained results indicate that more heterogeneity leads to longer mixing times.