

Λ -look-down model with selection

Abstract

The goal of this note is to study the lookdown model with selection when we replace the usual reproduction model, which is dual to Kingman's coalescent by a population model dual to the Λ -coalescent in the case of a population containing two types of individuals. In particular we formulate the infinite population " Λ -look-down model with selection". When the measure Λ gives no mass to 0, we show that the proportion of one of the two types converges in probability, as the population size N tends to infinity, towards the solution of a stochastic differential equation driven by a Poisson point process. We show that one of the two types fixate in finite time if and only if the Λ -coalescent comes down from infinity. We also consider the general case of a combination of the Kingman and the Λ -look-down model.