
Population dynamics, large deviations and finite-populations effects

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Abstract

Population dynamics with "Darwinian" evolution is, in the limit of large populations, equivalent to the large-deviation problem. From the populational perspective, this is the "replicator equation" limit.

However, finite-size effects show up at times as short as the logarithm of the population, and are hence difficult to avoid.

It turns out, however, that interesting effects appear also beyond this limit.

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