SFB 680

Molecular Basis of Evolutionary Innovations

Molekulare Grundlagen evolutionärer Innovationen

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Clonal interference, multiple mutations, and recombination: a two-locus infinite sites model

In asexual populations, both clonal interference, competition for fixation among concurrent beneficial mutations, and genetic drift, waste of beneficial mutations purely by random events, limit the speed of adaptation. In sexual population, on the other hand, loss of beneficial mutations due to clonal interference can be alleviated by genetic recombination. By considering the simplest two-locus model with an infinite number of sites each, we study quantitatively how much the speed of adaptation can be enhanced by genetic recombination. We first consider the infinite population size limit which renders the population dynamics deterministic and tractable analytically to a certain extent. Having a hint from the deterministic dynamics, we investigate the finite population dynamics using numerical simulations.

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2:00 p. m.

Institute for Genetics, Zülpicher Str. 47a, Seminar Room, 4th floor

Host: Joachim Krug

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