SFB 680

MOLECULAR BASIS OF
EVOLUTIONARY INNOVATIONS

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Population genetics of rapid adaptation

Abstract: Population genetics provides a theoretical frame work to interpret genetic diversity and make inferences about the evolutionary process. Traditional population genetics models assume that adaptation, i.e. change for the better, is rare. However, adaptive evolution is pervasive in many organisms and other models are needed to study their evolution. I will show that many models of asexual adaptive evolution give rise to a universal genealogical process known as Bolthausen-Sznitman coalescent. The Bolthausen-Sznitman coalescent, first described in spin-glass physics, makes concrete predictions for patterns of genetic diversity that can be compared against data and used for inference. I will close by discussing how these results for asexual evolution carry over to sexual populations.

January 16, 10:45

I. Physikalisches Institut, Zülpicher Str. 77, Seminar Raum

Host: Joachim Krug and Michael Lässig

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