



Life Sciences Seminar

The spatial Muller's ratchet

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Host: Nick Barton

During a range expansion, deleterious mutations accumulate at the colonization front leading to a decrease in fitness known as expansion load. An Allee effect is known to reduce the loss of genetic diversity of expanding populations, by changing the nature of the expansion from pulled to pushed. I will present a new model to study the impact of an Allee effect on expansion load, in which individuals have the genetic structure of a Muller's ratchet. Due to enhanced genetic drift the ratchet clicks rapidly at the front, leading to a fast accumulation of deleterious mutations. For large population, I will derive analytically quantitative features of the expansion, such as the expansion speed, and use simulations to show that the presence of an Allee effect reduces the rate at which the ratchet clicks. This is joint work with Alison Etheridge.

Monday, December 16, 2019 02:30pm - 03:30pm

Meeting room 1st floor / Central Bldg. (I01.1OG - Zentralgebäude)



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