



# SFB 680

## Molecular Basis of Evolutionary Innovations

Molekulare Grundlagen evolutionärer Innovationen

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#### **Static and Dynamic Fitness Landscapes: Studies from population and evolutionary game dynamics**

Evolutionary dynamics can proceed on two types of fitness landscapes, static or dynamic. Population movement on a static fitness landscape has been studied in great detail but usually the dimensions of the landscape are kept to a minimum. I address the time required for populations to move in a  $d$  dimensional fitness landscape from one fitness peak to another. If there are multiple paths via a fitness valley or a single ridge which is neutral then which is a faster route and when? As populations move over the fitness landscape they may change the landscape itself. To analyse such dynamic fitness landscapes I employ evolutionary game theory. Traditionally evolutionary game dynamics of two players with two strategies is studied. These games have been used to model many biologically relevant scenarios, from social dilemmas in mammals to microbial diversity. Some of these games take place between a number of individuals and not just two. We generalise the important results from two player, two strategy games to multiplayer games. Our results hold for any game and can easily be applied for specific cases, e.g. public goods games or multiplayer stag hunts.

**February 22, 2011**

**11:45 a. m.**

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

Host: Joachim Krug

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