

Bethe Colloquium

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Rapid adaptation and the predictability of next year's flu

Evolution is simple if adaptive mutations, that is evolutionary innovations, appear and spread one at a time. However, in large microbial populations many mutations arise simultaneously resulting in a complex dynamics of competing variants. I will discuss recent insights into universal properties of such rapidly adapting populations which has surprising parallels to the physics of front propagation and disordered systems. Not only do these models describe observations, but they also allow to predict which variants in the population are likely to be successful. When applied to seasonal influenza virus, such predictions can anticipate virus variants of future seasons and help to optimize the influenza vaccine.

Lecture Hall 1

Physikalisches Institut - Nussallee 12 - 53115 Bonn

Thursday, 4th May, 2017, at 16 c.t.