Recurrence and Transience of Frogs with Drift on $\mathbb{Z}^d$

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In this talk we will introduce the frog model with drift on the d-dimensional lattice. It describes a system of interacting random walks in which the particles are thought of as frogs. Initially, there is one active frog at the origin and one sleeping frog at every other site. The active frog performs a simple random walk with drift. Once a sleeping frog is visited by an active frog, it is activated and starts a random walk itself, independently of all the other frogs and with the same drift. It can wake up other sleeping frogs as well. The frog model is called recurrent if the origin is visited infinitely often almost surely, otherwise it is said to be transient. We will discuss the relation between the drift and the transience/recurrence of the system.

This talk is based on joint work in progress with Christian Döbler, Nina Gantert and Serguei Popov.