

# Seminar

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## **Novel Critical Behavior: From Spin Systems to Bird Swarms**

Twenty years ago, Tamas Vicsek and collaborators introduced a novel type of dynamics to investigate self-ordered motion of particles with biologically motivated interaction. The model is a generalized spin system, proposed to account for the swarm formation of birds; the birds' velocities become the spins. The resulting two-dimensional spin system has continuous rotational symmetry, but because of dynamical features it leads to spontaneous symmetry breaking and a phase transition to a state of long-range order in both one and two dimensions. It has become of considerable interest in different areas of statistical physics and continues to pose challenging problems.

**Tuesday, 23.01.2018, 14:15 Uhr**

**Place: D6-135**