

SOE 5: Plenary Talk Sidney Redner

Time: Monday 14:00–14:45

Location: H15

Plenary Talk

SOE 5.1 Mon 14:00 H15

The Dynamics of Wealth, Persuasion, and Popularity —

•SIDNEY REDNER — Boston University, Boston, USA

In this talk, I discuss how a number of simple models of statistical physics can be adapted to help elucidate some well-known social dynamics phenomena. I first present a way to describe the wealth distribution of a society through an idealized model in which random pairs of individuals repeatedly exchange some amount of their assets.

I will then treat the connection between the kinetic Ising model and basic models of social persuasion, in which individuals are regarded as social atoms. Models of this genre can help understand how consensus may or may not be achieved in a socially-interacting population. Finally, I will review the preferential attachment model of popularity and show how this ostensibly global dynamical evolution of complex networks can be obtained by a purely local growth rule. Throughout, I will show how these three models can be treated within the unifying framework of non-equilibrium statistical physics.