

## SOE 11: Award Session: Young Scientist Award for Socio-and Econophysics (YSA)

The Young Scientist Award for Socio- and Econophysics of the German Physical Society (DPG) recognizes outstanding original contributions that use physical methods to develop a better understanding of socio-economic problems.

Time: Tuesday 14:00–16:00

Location: H17

**Invited Talk** SOE 11.1 Tue 14:00 H17  
**From individual models of attitude change to patterns and dynamics of opinion landscapes** — ●JAN LORENZ — Uni Bremen, Bremen, Germany — Jacobs University, Bremen, Germany

We model the dynamics of attitude formation through social interaction in a large society. We consider attitudes on a one dimensional scale which represents either emotional valence towards a certain object or concept (e.g. "How good or bad is religion?"), the degree to which a certain value is important for a person, political left-right self-placement, or adherence to certain social norms (e.g. "Murder is to be punished with death."). Individual attitude change during interaction with others is modeled with respect to a reinforcement theory, an information processing theory, a social judgment theory, and a polarity effect. We will answer the questions to what extend these individual mechanisms contribute to the societal phenomena of extremal consensus, moderate consensus, polarization, fractionalization, maintenance of diversity, and cyclic behavior.

**Presentation of the Young Scientist Award to the Awardee.**

**Prize Talk** SOE 11.2 Tue 15:00 H17  
**The Dynamics of Social Conventions: From Names to Cryptocurrencies** — ●ANDREA BARONCHELLI — City, University of London (UK)

How do conventions emerge and evolve in complex decentralised social systems? This question engages fields as diverse as sociology, economics, cognitive science and network science. Various attempts to solve this puzzle pre-suppose that formal or informal institutions are needed to facilitate a solution. The complex systems and statistical physics approach, by contrast, hypothesizes that such institutions are not necessary in order for social consensus to form. In this talk, I will discuss theoretical and experimental results that demonstrate the spontaneous creation of universally adopted social conventions and clarify how the properties of the social network control the dynamics of norm formation. Then, I will discuss how social norms change, showing how historical data and lab experiments indicate that abrupt transitions between competing norms do not require the intervention of a centralised authority. Finally, I will present some recent results on the modelling of the cryptocurrency market, where users conventionally attribute value to electronic tokens. Overall, these results clarify the processes of social coordination and collective behaviour change and can help better understand the dynamics of such phenomena in online and offline social media as well as aid the design of effective policies to foster desirable collective behavioural shifts, for example to contrast climate change.

**After the YSA award session, there is an informal get-together with posters, beer, and pretzels.**