



CoCo Seminar Series

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Beliefs and Social Networks: Exploring Opinion Dynamics in Interconnected Complex Systems

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Wednesday October 25, 2023 12:00-1:00pm EDT
Hybrid (EB-T1 & Zoom; meeting link available on
<http://coco.binghamton.edu/>)

We can perceive the universe as an expansive web of connections at multiple scales, with each level exerting influence on the others through numerous direct or indirect pathways. When we focus on human connections, we encounter the social network that represents interactions among people. Below this lies an inner network formed by the belief systems within each person. During conversations, we potentially have the opportunity to update our inner state to align with our neighbors' opinions. However, the shape of our inner belief system plays a crucial role in this updating process. Beginning with an exploration of the structure we aimed to study, we will delve into the foundations of opinion dynamics. We will introduce a three-state discrete model and its essential parameters to encode opinion states. As we explore various topologies for the inner belief networks, ranging from complete graphs to sparse structures, we will unveil the dynamics that emerge, shedding light on their distinct characteristics and influence.

Irene Ferri holds a Bachelor's degree in Physics from the University of Barcelona, she continued her academic journey by completing a Master's degree in Computational Modeling at the same institution. Currently, she is in the fourth year of her Ph.D. program, under the guidance of Dr. Albert Díaz-Guilera. Her research focuses on opinion dynamics and opinion formation. In particular, she investigates Ising-like models and bounded confidence models, aiming to improve the understanding of the dynamics that govern opinion evolution and spreading in social networks. As part of her doctoral studies, she is undertaking a Ph.D. stay at Binghamton University, under the mentorship of Dr. Hiroki Sayama. Irene actively collaborates with the Heurística Association at the Institute of Complex Systems of the University of Barcelona. This collaboration allows her to conduct experiments to validate her models and gain insights into real-world opinion dynamics.

For more information, contact Hiroki Sayama (sayama@binghamton.edu). <http://coco.binghamton.edu/>