Instituto Universitario de Investigación
Biocomputación y Física de Sistemas Complejos
Universidad Zaragoza

# BIFI-Talks 2021


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## Ecology of Online Social Systems


Online social networks have significantly changed global communication dynamics and, in general, the way we interact. Every day our brain is flooded by information coming from a plethora of sources and this cognitive bottleneck translates into hyper-competition for a scarce resource: our attention. This pressure, in turn, pushes information producers to mutualistically interact with specific memes and actors, seeking the virality of their messages. Finally, memes' chances to persist and spread are subject to changes in the communication environment. The fact that all these terms -- competition for resources, mutualism and environmental changes-- are reminiscent of another research field --ecology--, suggests that, at least at a coarse-grained level, "information" ecosystems and natural ecosystems present strong similarities that can be exploited to understand their behavior. In this talk, building on these analogies, I will show how theories and tools developed for the study of ecological communities help to gain insights on human behavior in online social interactions. In the first part, I will introduce an analytical formalism --based on the neutral theory of ecology--, capable of capturing the competition for attention and explaining several emergent patterns observed in information ecosystems. In the second part, using both data analysis and numerical modeling, I will focus on the structure of information ecosystems showing that the underlying architecture of empirical actor-meme networks evolves towards self-similar nested arrangements like the ones found in natural mutualistic assemblages


***DIA Y HORA:* 4 DE JUNIO A LAS 12:30**

***ONLINE:* ZOOM**

**Seminar Link:** https://us02web.zoom.us/j/88679866793