An invitation to temporal network geometry

Talk by Harrison Hartle

This talk will cover ongoing and recent developments at the intersection of network geometry and temporality. The core theme is how dynamical coordinates influence the properties of geometric temporal networks. Temporal formulations of the S1/H2 models, as well as of random geometric graphs (without degree heterogeneity), will be discussed. Depending on the model specifications, snapshots of the temporal network may exhibit statistical equivalence to, or deviations from, an associated static network model. In cases with equivalence, coordinate-dynamics can nevertheless strongly impact *dynamical* properties of the temporal network, as will be illustrated via the network-structural autocorrelation. In cases where the dynamic network lacks statistical equivalence to an associated static model, coordinate-dynamics can lead to interpretable nonequilibrium effects, as will be illustrated via the effective connection probability function. Overall, this talk aims to (a) provide an introduction to temporal network geometry, (b) showcase a few illustrative results, and (c) invite the audience's involvement with future research in this area.