Abstract: "What the frequency spectrum in the infinite-sites model can teach us about the underlying coalescent"

The site frequency spectrum (SFS) is an important and well-studied summary statistic of population genetic data, capturing aspects of the underlying genealogical tree. For example, a recent increase in population size leads to an excess of 'singletons' in the spectrum relatively to a population in equilibrium. In this talk I will present basic population genetic models and properties of the SFS that they produce. The question whether the SFS contains enough information to recover the full demographic history of a population has recently been investigated. I will present some recent results in this direction, as well as possible extensions towards multiple merger coalescent models.