Modelling evolutionary processes

Mike Steel

Biomathematics Research Centre, University of Canterbury, Christchurch, New Zealand

Stochastic models provide insight into a variety of evolutionary processes, ranging from the origin of life, to the structure of phylogenetic trees, and with wider applications to technological innovation, ecology and cognitive processes underlying cultural evolution. In this talk, I describe how birth-death processes, autocatalytic networks, and Stuart Kauffman's concept of the 'adjacent possible' can be investigated using mathematical techniques.