175

Clustering Cues Creates Clues to Count Creatures

When a cue, such as a chirp from a frog, is recaptured on multiple microphones we can use spatial capture-recapture methods to estimate cue density. When we know who makes the cue, we are then able to estimate animal density. In this talk we cluster cues using their spatial location as the clue to count how many creatures are in the community. We present a marked Poisson process representation of spatial capture-recapture which acts as a mixture-model when the identity of the cues is unknown. We demonstrate through a simulation study that we can successfully estimate animal density using a small number of traps with accurate time of arrival information. The method is applied to Lightfoot's moss frog, an endemic species to South Africa that is threatened by habitat loss.