



Department of Mathematics and Statistics

COLLOQUIUM

Tuesday, October 7th, 2014

4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments served at 3:45)

Dr. Derek Sonderegger

Northern Arizona University

Analyzing occupancy data collected utilizing multiple detectors over a single time period.

Abstract: Traditional occupancy models using presence/absence data require multiple observation periods for detection and presence probabilities to be estimable. When camera trap data is used, this requirement typically results in the creation of artificial time periods that may or may not make biological sense. We propose a sampling scheme that uses only a single sampling period but utilizes multiple cameras in a single plot. When one or more cameras in a plot capture an animal, the detection probability can simply be estimated from the number of cameras that capture the individual and the traditional confounding of the probability of presence and the probability of detection given the animal is present is avoided. We implement this model using a hierarchical Bayesian model and tested the method by performing a computer simulation study with animals following a bias random walk through a plot with multiple cameras.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar: Tuesday October 7th, 12:45 – 1:45 pm, AMB 164.

Applied Math Seminar (AMS): Thursday, October 9th, 12:45 – 1:45 pm, AMB 164. Speaker: Jim Swift: “Quantum Mechanics”.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Friday at 3pm.