



SEMINAR SERIES

When: Thursday, November 30, 2017
Time: 3:30 – 4:30 pm
Refreshments at 3:15 pm
Where: Sidney Smith Hall Rm 1069
Speaker: **JANINE ILLIAN**, University of St. Andrews
Host: Daniel Simpson

Nessie, Seals and all that – Spatial Modelling for Ecological Surveys from a Scottish Perspective

Spatial point processes are stochastic processes that model the location of individuals in space and time. However, classical point process methodology assumes the entire spatial area of interest has been surveyed and that individuals have been detected uniformly in space. Treating surveying plot sampling or distance sampling as a thinning of a spatial point process allows us to use methodology developed for spatial point processes and to operate in a general spatial modelling context. As a result, general and computationally efficient model fitting software such as R-INLA, based on computationally efficient integrated nested Laplace approximation become relevant.

In this talk we illustrate how the software package inlabru, which has been designed to fit thinned point process models and is based on R-INLA may be used to fit flexible spatial models to a wide range of ecological data structures. In addition, we show how this development has in turn contributed to widening the class of models that may be fitted with R-INLA and provided a computationally efficient way of fitting complex marked point process models.

