統計科學研究所
INSTITUTE OF STATISTICAL SCIENCE

學　術　演　講

講　題：Estimating population size: the importance of model and estimator choice

講　者：Prof. Matthew Schofield
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時　間：2023年7月24日(星期一)，10:30-12:00

地　點：統計所B1演講廳

Abstract

This work is motivated by a mark-recapture distance sampling analysis. We found unexpectedly large differences between Bayesian and frequentist estimates of abundance despite a moderately large number of observations (~600). Further exploration revealed similar sensitivity to estimator choice when focusing on frequentist estimation. To understand these differences, we consider abundance estimation from general mark-recapture models with three estimation strategies (maximum likelihood estimation, conditional maximum likelihood estimation, and Bayesian estimation) for both binomial and Poisson capture-recapture models. We find that assuming the data have a binomial or multinomial distribution introduces implicit and unnoticed assumptions that are not addressed when fitting with maximum likelihood estimation. This can have an important effect, particularly if our data arise from multiple populations. We compare our results to those of restricted maximum likelihood in linear mixed effects models.

※ 實體與線上視訊同步進行。

※ 茶 會：10：40開始。