Estimating the population size in capture-recapture experiments with right censored data

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Capture-recapture methods are commonly used in ecology to estimate animal population sizes and species richness. These methods have become popular, not only in ecology but also in social and medical sciences, to estimate the size of elusive populations such as illegal immigrants, illicit drug users, or people having a drinking problem. The talk will address a new non-parametric approach for estimating the population size when we only know how many animals or individuals were observed once, twice, ... , as well as how many animals or individuals were observed r or more times (right censoring pattern). Similar to the Chao estimator, the method provides a lower bound on population size as well as bootstrap confidence intervals. The particular case of censoring at r=2 will be studied in detail, along with several applications in ecological and social sciences.

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