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A NEW PARAMETRIC DETECTION FUNCTION FOR LINE TRANSECT SAMPLING

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Abstract

This paper suggests a new parametric detection function model to estimate the population abundance of specific objects collected by using line transect sampling technique. The proposed detection function satisfies the shoulder condition assumption at origin and it is monotonically decreasing in perpendicular distances of specific objects. The maximum likelihood and moments estimators of the population abundance were derived under the proposed model. A simulation study is performed to investigate the performance of the resulting estimators showing the good properties of them comparing to some other existing competition estimators.

Keywords and phrases: line transect sampling, shoulder condition, parametric method, exponential model.

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