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Bivariate POISSON Binomial Distributions

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Abstract

Three bivariate generalizations of the POISSON binomial distribution are introduced. The probabilities, moments, conditional distributions and regression functions for these distributions are obtained in terms of bipartitional polynomials. Recurrences for the probabilities and moments are also given. Parameter estimators are derived using the methods of moments and zero frequencies and the three distributions are fitted to some ecological data.

Key words: *Bivariate Poisson binomial distribution, bipartitional polynomials, method of moments, method of zero frequencies, ecological data.*