

Ecological Co-occurrence Networks

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Contents

The study of co-occurrence holds promise for presenting a window into the interactions among species. Within the last five years, methods have been developed that take a network based approach to analyzing co-occurrence patterns. The following is a summary of these methods.

1 Co-occurrence Analyses

1.1 Diamond 1972

- Summary: originated the analysis of co-occurrence patterns using checkerboard units

1.2 Simberloff ?

- Summary: critique of Diamond

1.3 Stone and Roberts 1990

- Summary: introduced the use of the average checkerboard unit (i.e. the C-Score)

1.4 Gotelli 2001

- Summary: organized co-occurrence analyses within a null modeling framework

2 Network Inference

2.1 Zhang et al. 2007

- Summary: uses pairwise correlations without an alpha adjustment
- Pros:
- Cons:

2.2 Vera-Licona and Laubenbacher 2009

- Summary: uses evolutionary algorithm to infer the structure of a polynomial dynamical system
- Pros:
- Cons:

2.3 Araujo et al. 2011

- Summary: uses joint probabilities and a parametric test of difference from the null expectation
- Pros:
- Cons:

2.4 Faisal et al. 2011

- Summary: compares six methods (GCM, LASSO (linear), LASSO (logistic), SBR, Structure MCMC and Population Simulation)
- Pros:
- Cons:

2.5 Ovaskainen et al. 2011

- Summary: uses a Bayesian hierarchical modeling approach
- Pros:
- Cons: