

Generalized core functions of maximum entropy theory of ecology

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Abstract

Maximum entropy framework has been utilized to construct ecological models, thus providing support to emerging ecological relationships at a broader scale. Core distributions of Maximum Entropy Theory of Ecology (METE) are the Spatial Structure Function (SSF) and the Ecosystem Structure Function (ESF). SSF is a by-species prediction of the clustering of individuals over space. ESF is a kind of “container function” that describes the probability space of how abundances are assigned to species and how metabolic energy is partitioned over individuals in a community. In this talk, generalized core functions of METE will be presented. Generalization is done via the Tsallis q -entropy and the derivation uses the method of Lagrange multipliers.