Ecological Complexity and Biodiversity Maintenance

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An ecological community can be viewed as a network of interacting species, where various interspecific effects are transmitted and propagate over the community to drive community-level dynamics. Community complexity, often captured by species diversity and complex interactions between them, is a characterizing feature of real ecological communities, but theory often predicts that such complexity could make a community more fragile. This being so, what maintains species diversity in the natural, complex communities? In this talk I would like to focus on possible theoretical mechanisms for biodiversity maintenance and on the predicted role of ecological complexity in those theories. Interaction flexibility and diversity in interaction types will be of particular focus as the factors that potentially reverse the classically negative complexity effect to biodiversity maintenance into a positive one.