



**Lundi 1<sup>er</sup> juin 2026, 14:00**

Grande salle + visio.

## **ANTICIPATING ECOLOGICAL DISRUPTIONS WITH MEASUREMENT OF NETWORK COHERENCE**

par

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- Biodiversity is more than the distribution of individual species, it is also the collection of interactions among them driving ecosystem processes and supporting diversification of life. Reporting how diverse ecological networks respond to environmental change is however a major challenge for biodiversity monitoring. In this presentation I will introduce the concept of Ecological Network Coherence (ENC) to describe the complex distribution of responses of a community to an environmental change such as temperature.
- I will first develop intuition on the importance of ENC using analytical food web models. High coherence indicates that species respond similarly and therefore the community should maintain its internal dynamics and functions; alternatively, incoherence induces community re-organization and could lead to disruption of its functioning. Followingly, I will illustrate this approach with two empirical systems: a tropical pollination network, where interacting mutualists were more coherent in their temperature responses than the broader community, and a marine food web, where coherence in abundance trends shifted during collapse.
- These results point to the importance of further exploring ENC distributions as potential early-warning indicators of ecological disruption. The ENC formalism provides novel quantitative tools to go beyond the simplistic univariate assessment of biodiversity changes. I will discuss its relevance for monitoring and projection of biodiversity changes following the new Global framework for biodiversity.