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OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY
沖縄科学技術大学院大学

THEORETICAL SCIENCES VISITING PROGRAM

TSVP TALK

Biodiversity Modelling Under Climate Change

From Individual Species to Communities

2024

THU.

Sep. 5

15:00–16:00

HYBRID L5D23, ZOOM



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Studies using models to predict the impact of climate changes on biodiversity, usually begin by examining the relationship between species distributions and climate variables, based on the assumption that climate limits species survival. As a result, alterations in climate are expected to lead to shifts in species distributions. A major shortcoming of these models is their focus on individual species. Although models can be applied to thousands of species at once, they often treat each species as an independent entity, reacting in isolation to climate changes. This approach neglects complex dynamics within ecological communities, where collective species responses to climate changes are not merely the sum of individual responses. I propose that progress requires the development of models that capture the responses of entire communities to environmental change. I suggest a shift from the traditional climate-limiting niche theory, which is applicable to individual species, to a resource-limiting niche theory.

Spanish National Research Council (CSIC) & Évora University

Miguel B. Araújo

Miguel B. Araújo is a biogeographer dedicated to understanding how Life distributes in space and time, and why. He employs a wide range of modelling approaches to explore how climate influences the distributions of species and controls complex properties and dynamics of communities. He is a Research Professor of the Spanish Research Council (CSIC) and Chair of Biodiversity at the University of Évora. In the past, he also held faculty or research positions at the Imperial College London, Oxford University, University of Copenhagen, French National Research Council (CNRS), and the Natural History Museum in London.



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