明治大学先端数理科学インスティテュート

# MIMS現象数理カフェセミナー

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## Modelling trees distribution in a Central African rainforest: impact of climate change on competition

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**Abstract:** Tropical rainforests cover around 11 million km$^2$ of the earth surface and are distinguished by their astounding biodiversity, their essential role in the Earth climate system and the resources they provide to many human populations. The various threats laying upon these valuable ecosystems triggered protection or sustainable exploitation policies and also made even more critical the need to understand their functioning. Being highly complex and diverse environments, part of the research effort consists in designing models which allow to study the key mechanisms and get insight into the possible future of these forests. My work falls within the attempt to answer the following question: will tree species composition of rainforests be affected by the changing climate conditions? The issue has been approached through deterministic modelling, combined with the analysis of a field dataset from a Central African forest. The objective was to look for a model describing a tropical forest tree population, in terms of tree density, and that could account for multiple interactions between tree species groups and between trees and their environment.

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