

### Title of the symposium:

Modeling the structure and functioning of forest landscapes under changing climate and disturbance regimes

### Detail of organizer(s):

#### Responsible

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### Co-organizer(s)

#### Co-organizer

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### Symposium abstract

Forest ecosystems and their products and services play an important role to achieve ambitious climate change mitigation, but also have to adapt to climate change. The increasing demand for climate change mitigation and adaptation as well as the contribution of forests to a bio-based economy, sustainable development and biodiversity targets will lead to massive changes in forest management and forest resource use. Process-based forest models can assess the future provisioning of forest products and ecosystem services by simulating different management options allowing to assess the production of wood products, biomass, and regulatory services while forecasting changes in forest resilience under climate change. However, feedbacks between climate, natural disturbance regimes, and forest ecosystem management are still largely unexplored by models. This symposium

intends to demonstrate how to integrate pressures by climate and disturbance regime changes into management-sensitive forest landscape models, focusing on multiple drivers of forest resilience and the individualistic, population, or landscape structural responses to management-induced ecosystem modification.

### **How your symposia will improve landscape ecology science?**

The implementation of feedbacks between climate change, disturbance regime changes and silvicultural management will be a significant step forward for forest landscape modeling science, strongly improving the capacity of forest models to address key research questions related to managing resilient forest to contribute to a sustainable bioeconomy, and improving the usefulness of model results for forest planning and climate and forest policy. The ensuing research insights are highly relevant to better quantify the role of global forests in the 21st century and beyond, and will allow to develop and support forest management scenarios that are consistent with the need to provide climate mitigation and adaptation options for the local and global bioeconomies.

### **Broad thematic areas**

Broad thematic areas 1st choice: Landscape modelling

Broad thematic areas 2st choice: Specific landscapes (i.e. Mediterranean landscapes, rice landscapes, ...)

### **Free Keywords**

forests, landscape modeling, natural disturbances, forest management, climate change

### **Outcomes of symposium**

Special issue in a scientific journal (to be negotiated)