



## **Workshop 3/2:**

# **Virtual worlds – real decisions: modelling the Alps (NRP 48 Synthesis V)**

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Moderator: **Eckart Lange** (UK – Sheffield)

### **Concept:**

Experimental approaches can help to increase our knowledge base in the field of spatial and landscape planning and to assist in decision-making. Simulation models represent virtual worlds where experiments can be conducted and the effect of alternative scenarios can be demonstrated. What are the tools needed in planning practice and for decision-making?

In order to show the potentials and limitations of model application in planning and decision-making we pursue the following approach:

1. We review the contributions of the NRP48 in the field of landscape modelling and assess their potential for application in planning and decision-making,
2. We document a modelling procedure by formulating use cases and applying an existing model to one of these use cases, and
3. Through stakeholder involvement we identify the expectations and thoughts on modelling applications in planning and decision-making.

Modelling land use change refers often either to areas whose change turns out to be related to human activities, or related to environmental changes without human interference.

The applied approach for the Montafon region tries to cope with these issues through simulating landscape transition by an agent-based model:

1. agents trigger land use change actively through construction activities or passively through extensification of agriculture in steep or remote terrain.
2. climate change contributes as a framework condition to landscape transition directly by increasing the frequency of natural disasters and moving the timberline and changing the economic conditions for (winter) tourism which depend on certain climate conditions.

### **Inputs:**

**Ariane Walz** (CH – Davos): Landscape modelling and visualisation as instruments for planning and decision-making

**Wolfgang Loibl** (A – Vienna): Micro-simulation of alpine landscape transition due to local actors behaviour and climate change – experiences to support qualitative foresight scenarios from the Montafon Region, Austria