SPECIAL SESSION 5

Remote sensing of forest resilience: from recovery to early warning

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The goal of the session

Dense time series of coarse spatial resolution images (e.g. AVHRR) have been used for deriving forest resilience and stability measures at regional to global scales. Such measures of 'engineering resilience' are, however, of limited practicability. Using time series of moderate resolution images from Landsat and novel data from Sentinel-1/-2 might help moving from a pure engineering towards more ecological definitions of resilience (i.e., identifying transitions between alternative stable states, mapping material legacies and structural variability, spatial indicators of resilience). Yet, time series of Sentinel-1/-2 and Landsat are often highly nonlinear, capturing both natural and human induced disturbances while ephemeral changes from seasonality are difficult to model. Novel approaches are thus needed in order to make remote sensing truly useful for assessing forest resilience. Developing new remote sensing-based indicators will make resilience an operational tool for policy makers and land management, helping to sustain global forest resources despite increasing pressures.

Potential Topics

- How can we measure forest resilience using remotely sensed data?
- How can novel data from LiDAR, RADAR, and optical satellite data help us to operationalize forest resilience?
- What could be novel indicators of resilience: Material legacies, structural variability, spatial patterns?
- How can we validate remotely sensed resilience indicators?

The session is open to any assessment of forest resilience, including resilience to natural and human disturbances, global change, invasion, and other pressures from global change.