



## **Biodiversity measure and structural characteristics from aerial observations at Mt. Kilimanjaro, Tanzania**

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Methods for monitoring and mapping both, species diversity as well as ecosystem functions/processes are essentially for ecosystem assessments and conservational efforts. Remote sensing offers a unique potential in providing such spatially explicit information. Spectral complexity can be related to species diversity at different scales.

Based on hyperspectral and LiDAR aerial observations, more than 30 research plots of different habitat types which are located at the southern slopes of Mt. Kilimanjaro will be characterized in detail concerning their species diversity in terms of spectral variability and their structural composition. This information will be used to assess the degree of representativeness of the research plots for the respective land-cover.

We presume that the concept of “spectral species” results in biodiversity measures comparable to in-situ observed information and is therefore suitable for substituting time-consuming field work to a certain degree. Furthermore, we postulate that ecologically important plant species can be grouped into functional guilds that show a distinct spectral and structural pattern which enables their remote sensing based prediction from aerial datasets.