BioSpace25 - Biodiversity insight from Space
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Ecosystem Traits and their use in biodiversity applications

Chairs: Micol Rossini and Gregory Duveiller

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- **Fabian D. Schneider** - Biodiversity from Space: Understanding Large-Scale Patterns of Ecosystem Structure and Diversity with Remote Sensing
- **Kendall M. Jefferys** - Vegetation structure and plant functional traits predict pollination networks across the tropics
- **Dhruva Kathuria** - A Bayesian Framework for Sensor-Agnostic Plant Trait Prediction Using Imaging Spectroscopy
- **Andreas Huth** - Towards estimating vegetation structure from orbit: a case study for tropical forest and TanDEM-X
- **Michele Torresani** - Exploring the role of vegetation height heterogeneity through LiDAR information for biodiversity estimation
- **Jessica P. Thomas** - Soil carbon predictions across the landscape using remotely- sensed canopy structure measurements in southern Amazonia

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Key recommendations

- **Scalable analyses**: develop scalable approaches in both space and time tackling dynamic biodiversity changes across scales, using multiple sensors and data streams to monitor ecosystem structure, diversity, and function.
- **Data coordination and access**: (1) promote the coordination of joint field campaigns with coincident ground measurements and remote sensing data, and (2) develop global open-access databases to collect and analyze biodiversity-related data.
- **Advanced forest modeling**: Integrate remote sensing products into forest models, using technologies such as LiDAR, radar, and optical sensors to monitor forest structure, including disturbed forest states.
- **Structural heterogeneity**: use remotely sensing data (LiDAR, photogrammetry) to assess environmental heterogeneity which is linked to different aspects of biodiversity.
- **Soil carbon monitoring and policies**: (1) improve the understanding of the relationship between ecological variables and soil carbon, and (2) advocate for the inclusion of satellite-based soil carbon models in environmental policies to ensure that this massive carbon stock is accurately estimated and protected.