

## Seminario CNR-ISAC

Giovedì 03/04/2025 h15.00

In presenza presso la sede di Torino (sala riunioni) e in collegamento online

<https://meet.goto.com/932307501>

### **Biosphere-Atmosphere interactions: the role of biodiversity**

**Abstract:** Biosphere-Atmosphere interactions represent the feedback processes between plant (and organisms functioning) and atmosphere processes as these relate to carbon and water cycles. While these bio-physical processes are becoming better understood, the role of the biosphere, namely biodiversity in terms of composition and functioning remains poorly understood. The development of remote sensing sensors, data and techniques has now enabled us to not only assess change in land cover and its change, but also obtain information on plant traits and proxies of biodiversity fundamental for biosphere-atmosphere interactions, and assessing the role of human activities. In this presentation I will show (i) recent advancements of remote sensing to measure biodiversity and plant traits, (ii) the potential effect of changes in plant traits on fundamental water variables that determine moisture recycling flows, and (iii) how moisture recycling is fundamental to the maintenance of the Amazon and the regulation of our global climate system.



**Short Bio:** Maria J. Santos is a Professor in Earth System Sciences at the University of Zurich in Switzerland. She holds a doctoral degree in Ecology from the University of California Davis. Her research asks questions around the co-evolution of social-ecological systems, a fundamental step to place Earth System Sciences in the context of the Anthropocene. Her approach is interdisciplinary, and observes, describes, measures drivers and their impact, and models the interactions and feedbacks between Earth System spheres and the human system.

<https://www.geo.uzh.ch/en/units/ess.html>