universität freiburg

Kolloquium - Boden, Wasser, Luft

14. November 2024, 16 ct - 18 Uhr
Hörsaal Fahnenbergplatz, Friedrichstr. 39

M.Sc. Sinikka J. Paulus

Max Planck Institut für Biogeochemie, Jena

A novel framework for assessing the spatiotemporal dynamics of soil water vapor adsorption using a global observation network

Quantifying the input of liquid water to the Earth's surface is crucial for describing the exchange of water and energy between the Earth's surface and the atmosphere. Rainfall is the largest input of liquid water to the Earth's surface. However, even the magnitude, frequency, and timing of small non-rainfall inputs of water into the ecosystems are important from an ecological perspective, especially in ecosystems where water is temporarily limited. These inputs include fog, dew, and the adsorption of water vapor from the atmosphere on the soil surface. The detection and quantification of these fluxes is still a challenge and is not part of standard meteorological measurements, which limits our knowledge about the relevance of these fluxes at larger temporal and spatial scales.

My research focuses on the detection and quantification of non-rainfall water inputs, using theoretical knowledge to investigate the potential of different measurement instruments to detect the presence of non-rainfall water inputs in different ecosystems. Beyond the individual processes, my work highlights the importance of considering nighttime measurements of water fluxes due to temperature-induced condensation, and illustrates how soil pore-scale forces affect water fluxes measured above the canopy.

Veranstaltet von den Professuren für
Hydrologie, Umweltmeteorologie, Bodenökologie, Umwelthydrosysteme und Biochemische Systemmodellierung
Fakultät für Umwelt und natürliche Ressourcen der Universität Freiburg