

CGU_H_09: Coupled Hydrological and Biogeochemical Functions, Part II: Terrestrial Ecosystems

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Session Description: The hydrological and biogeochemical functioning of terrestrial ecosystems are intricately linked to physical, chemical and microbial processes. These processes play a critical role in controlling regional and global biogeochemical cycles, water and air quality, and climate change. Many of these processes are modulated by hydrological and climatic drivers that vary across spatial and temporal scales, resulting in rapid changes in environmental conditions and biological activity. Understanding these interconnected processes is greatly enhanced by using integrative approaches that allow for a holistic understanding of relevant parameters within dynamic systems (*e.g.*, wetting and drying, flooding, freezing and thawing, groundwater-surface water interactions and flow regimes). This session will focus on interdisciplinary research that advances our mechanistic understanding of the responses of terrestrial ecosystems and associated biogeochemical processes to dynamic hydrologic and climatic drivers. Additionally, we aim to facilitate in-depth exchanges of concepts, data, advanced measurement techniques, and modelling approaches to represent soil and sediment biogeochemical functioning in terrestrial ecosystems. We particularly welcome presentations on the role of coupled hydrological and biogeochemical processes in the subsurface environment, and the responses of microbial communities, carbon and nutrient fluxes under dynamic environmental conditions.

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Joint Session Submission: CGU, Biogeosciences; CSSS