

**Session title: Ecotrons and lysimeters: Complementary tools for observation and experimentation on the critical zone**

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**Abstract:**

Ecotrons and Lysimeters are key tools for studying terrestrial ecosystem responses to stresses induced by global change and pollutants, and for ecological engineering. They allow a general monitoring of developments in ecosystems under controlled conditions, and to expose soil-plant systems to simulated futures or extreme conditions.

The significant development of lysimeter technology, including more complex ecotrons, has led to a much more diverse scientific use including studies of hydrological but also biogeochemical processes at the interface between soil, plant, atmosphere and their interaction. Ecotrons and lysimeters are useful tools to study and integrate terrestrial ecosystem processes at various scales, from microcosms of a few litres up to macrocosms of several tons including whole soil profiles. Integrated responses of ecosystems to induced environmental changes, such as global climate change and fate of pollutants, as well as impacts of ecosystem management can be measured and quantified. The Conference Session Ecotrons & Lysimeter will present and discuss recent research on the use of such tools at an international level.

Special focus will be given to the impacts of global change, fate of pollutants and ecological engineering, especially to technical limitations and needs for further development.