**Session Proposal (205)**

# Session Title

# Hydromorphic and Submerged Soils: Geography, Processes, Classification.

(session proposed by the IUSS Commission 2.05 – Soil Chemical, Physical and Biological Interfacial Reaction)

# Session Organizers

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# Session Description

Water significantly impacts the development, nature, and evolution of soils. Of interest for this session are permanently and intermittently submerged and hydromorphic soils from both natural and cultivated areas. Actually, according to Soil Survey Staff (2014), submerged soils are defined as those where “the upper limit of soil is the boundary between soil and either air, shallow water, live plants, or plant materials that have not begun to decompose”. Generally, for shallow water, the maximum limit of 2.5 m is considered. However, if we contemplate all soil formation forces, also with bathimetries greater than 2.5 m we can have soils, instead of sediments. Submerged soils therefore need profound revision in terms of classification and characterization. In some cases, submerged soils also hide palaeosols generated during past cold climate conditions. Then, vast areas are affected by intermittent submersion due to tidal activity or lake/river flooding; these soils have peculiar physicochemical and biological (including plant cover and rhizosphere microbes) properties not completely discovered and understood. Even paddy soils and soils interested by aquaculture (under salt, brackish, and sweet water) are of interest for this session, also in consideration that they strongly affect human activities.

The session offers an opportunity for discussion among researchers interested in studying and monitoring the quality of strongly water-affected soils, which are closely linked to food production and environmental conservation.

# Relevance

This session is of considerable importance for strengthening the study of pedogenesis and the ecologic relevance of submerged and hydromorphic soils in natural and cultivated environments. Soil-water relationships in natural and cultivated environments will be considered, paying attention to salinization, pollution, and other ecological processes.

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# Format

**‌Oral Presentations‌:** Featuring keynote speeches by renowned international experts on submerged soils.

**‌Panel Discussions‌:** Organizing in-depth dialogues among scholars on hot topics dealing with submerged/hydromorphic soils, such as fishing, ecology, fish and mussels nursery, cultivation.

**‌Poster Presentations‌:** Providing a platform for scientists and students to showcase their research findings and foster academic exchange and collaboration.

# Proposed Speakers

**Martin C. Rabenhorst**

Environmental Science & Technology,

0208 HJ Patterson Hall College Park, Maryland 20742 [mrabenho@umd.edu](mailto:mrabenho@umd.edu)

Research Focus:

Genesis, morphology, and classification of hydromorphic and submerged soils

Pedogenesis and soil-water landscape relations

Hydropedology of non-tidal wetlands and coastal marshes

Pedogenesis and resource inventory of subaqueous soils

Technology development for documenting reducing soil conditions

**Otero Perez Xose Lois**

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Research Focus:

Cartography of soils and landscape, phisical-chemistry, degradation and recovery of grounds and waters.