**Session Proposal**

# Session Title

Wetland soils, acid sulfate soils and sulfidic materials

# Session Organizers

This session is hosted by the IUSS Working Group for Acid Sulfate Soils.

**A/Prof Anton Boman (Chair)**, Geological Survey of Finland, anton.boman@gtk.fi (primary contact)

**A/Prof Vanessa Wong (vice-Chair)**, Monash University, vanessa.wong@monash.edu

**A/Prof Chaolei Yuan**, Sun Yat-sen University, yuanchlei@mail.sysu.edu.cn

# Session Description

Wetland soils, acid sulfate soils and sulfidic materials are found on every continent around the world in coastal and freshwater environments, and in natural, conservation, agricultural and mining settings. These soils can act as sinks for carbon, or sources if drained, and play critical roles in the cycling of greenhouse gases, nutrients and biogeochemical processes, which occur at the intersection of terrestrial and aquatic ecosystems. These soils exhibit unique properties due to the influence of fluctuating redox conditions which affect the soil biota and chemical properties. Acid sulfate soils are considered the nastiest soils in the world due to their release of acidity and potentially toxic metals into the environment when metal sulfides within these soils are exposed to oxygen. The acidic and metal-rich leachate from acid sulfate soils causes detrimental impacts to agricultural land (affecting food production), natural and managed ecosystems (loss of biodiversity), watercourses (access to clean water), and infrastructure (corrosion of steel and concrete) in urban environments.

By improving our understanding and management of these soils, we can support several of the UN Sustainable Development Goals (SDGs) by enhancing agricultural productivity (SDG 2), protect water quality (SDG 6), preserve biodiversity (SDG 15), and maintain resilient infrastructure in urban areas (SDG 9 and SDG 11).

This session aims to bring together researchers, industry professionals, environmental managers, and policymakers from around the world to share knowledge and advance the fields of soil science, soil biogeochemistry, pedology, land and water management to address the issues and describe the advancements in the broad field of acid sulfate soils. Sharing and improving our knowledge on wetland soils, acid sulfate soils and sulfidic materials directly aligns with the conference theme “Soil and the Share Future for Mankind” as poor management can lead to significant degradation of soil and water resources, and associated infrastructure.

# Format

Oral presentations with posters. A general meeting of the Acid Sulfate Soils Working Group will be arranged during the Congress.

# Proposed Speakers

**Professor Tongxu Liu**, expert on soil biogeochemistry and mineral-microbe electron transport: (<https://scholar.google.com/citations?hl=en&user=C1iQAJkAAAAJ&view_op=list_works&sortby=pubdate>)

**Dr Wirastuti Widyatmanti**, expert on remote sensing for soil and coastal resource management (<https://scholar.google.com/citations?user=XRhRKzwAAAAJ&hl=en>)

**K. Ramesh Reddy**, expert on wetland biogeochemistry (<https://scholar.google.com/citations?hl=en&user=NvSbyMoAAAAJ&view_op=list_works&sortby=pubdate>)

**Junhong Bai**, expert on coastal wetlands and wetland restoration (<https://scholar.google.com/citations?user=uxCjBusAAAAJ&hl=en&oi=sra>)

**Dr Lamine Fall**, expert on acid sulfate soils in Africa: (<https://www.researchgate.net/profile/Lamine-Fall-2>; <https://www.semanticscholar.org/author/A.-L.-Fall/103457132>)