



1. Title

Paleosols and Pedosedimentary Sequences for Understanding Impacts of Climatic Changes

2. Type

Commission Symposium: Comm. 1.6-Paleopedology

3. Organizer(s) & Convener

Dr. Alexander Makeev

MSU-RAS Soil Institute, Moscow University, Vorobyovy Goru, 119899, Moscow, Russia,

E-mail: makeevao@gmail.com

Dr. Mohammed Rafi G. Sayyed

Geology Dept. Poona College, Camp, Pune 411 001, India,

E-mail: mrgsayyed@yahoo.com

4. Rationale

Fragile global environmental conditions today urgently demand improving our understanding of past climatic changes and their impacts on terrestrial ecosystems. Paleopedological investigations can significantly contribute to this understanding.

5. Objectives

Objectives of this session are to present biological, geochemical, biogeochemical, mineralogical and other proxies that allow for detecting impacts of past climatic changes on terrestrial ecosystems, including past changes in biogeochemical cycles. Presentation of soil-sediment sequences such as loess-paleosol, tephra-paleosol, fluvial and marine, colluvial and other sequences are especially welcome, as they represent particularly valuable archives of palaeo-environmental changes.

6. Description

Predicting responses of terrestrial systems to present and future climatic changes requires an improved understanding of how the Earth's climate has evolved from cold snowball earth state to warm greenhouse state and how terrestrial systems and biogeochemical cycles responded to such changes in the past.

Palaeo-environmental studies using paleosols as proxies allow for reconstructing these changes and responses. The chemical composition of mineral and organic matter in paleosols holds great potential to reconstruct regional palaeo-climatic and – environmental conditions. It is however important to understand the mechanisms that influence geochemical data preservation in the proxies.

This session invites studies on past inorganic, biological and biogeochemical processes acting in paleosols and former weathering zones. In particular, proxy data-climate model inter-comparisons are encouraged. Contributions identifying extreme events or presenting suitable proxies for palaeo-precipitation, seasonality, palaeo-weathering, and related geochemical variations in paleosols are welcome.

