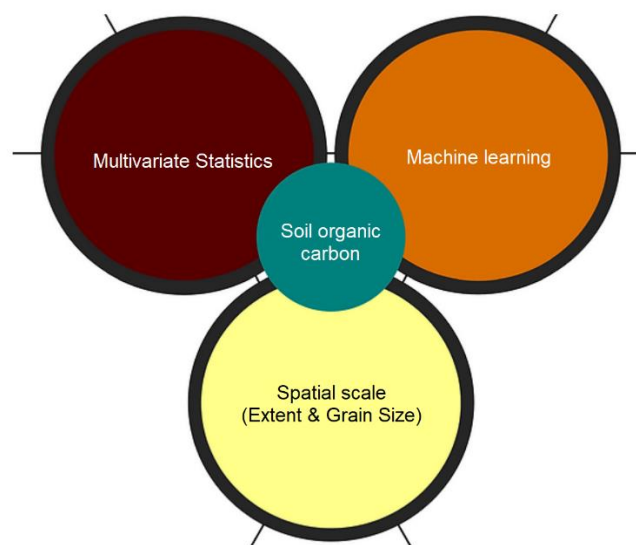


Bachelor and Master's theses topics under the Chair of Soil Science and Geomorphology

Topic: Assessing scale-dependent controls of topsoil organic carbon based on multivariate and machine learning approaches

Preface

Soil organic carbon (SOC) is essential for maintaining soil structure, increasing soil water retention capacity, and nutrient cycling. Thus, SOC controls and is controlled by various environmental mechanisms. Despite the need for such information for policy and decision-making, SOC controls are rarely assessed across multiple spatial scales (e.g., spatial extent and grain size). This information is expected to improve our understanding and inferences about soil processes, as well as environmental monitoring.



Aim

A suitable student is sought to take on this task, in which they will apply multivariate and machine learning approaches to investigate the scale-dependent controls of SOC across Germany. The findings of this study should be able to elucidate the differences and similarities in SOC controls across different spatial scales. Moreover, it presents baseline information for understanding SOC-related processes.

Requirements

Prior knowledge of soil processes, machine learning, and multivariate statistical fundamentals is required. Additionally, programming knowledge, preferably in R, is required. Ideally, the final thesis should be written in English.

Contacts

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