Session title

Data-Driven and Hybrid Methods for Groundwater Vulnerability Assessment

Description

Ongoing environmental pressures - urban expansion, intensified agricultural practices, industrial development and climate change - require developing sustainable groundwater protection and risk prevention strategies, where groundwater vulnerability assessments play a key role in supporting water management and decision-making processes. The increasing availability of high-resolution datasets allows for more advanced, reliable and transferable assessment tools - including statistical methods, machine and deep learning techniques - and hybrid approaches. The objective of this session is to gather case studies and scientific contributions focusing on the development of novel index-based, data-driven and hybrid methods, and real-world applications supporting groundwater protection and water management. Contributions that link methods to management-relevant outcomes, adaptation strategies, and practical case studies spanning from local, to regional, to continental scale studies.

Keywords

groundwater management, contamination, risk assessment, artificial intelligence, future challenges

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