

Novel spatio-temporal modeling paradigms: integrating spatio-temporal and data-driven approaches

The big data revolution, characterized by increasing access to both data and computing services, is supporting the development of a variety of data-driven approaches in the Earth, social and geographical sciences. While we strongly believe in these approaches, we think that their “blind” use underexploits the know-how of geographers and Geocomputation specialists. Hence, we propose a session to capture the best of both worlds and to discuss how to seamlessly integrate data-driven approaches into Geocomputation. More specifically, we look for contributions that showcase the complementarity of artificial intelligence (machine learning and data mining) and geocomputational approaches. For instance, the use of machine learning methods to improve agent behavior in agent-based modeling or the combination of classical machine learning methods and spatial statistics so that the former can better exploit the specificities of geospatial data. In short, work presented in this session can either focus on the integration of data-driven and geographical approaches, the use of domain-specific knowledge in data-driven approaches, or the illustration of geocomputational solutions (software libraries or packages) that overcome technical difficulties in linking or integrating different modeling paradigms.

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