

SFB/TR 8 Spatial Cognition / IQN Video Conference

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"Computing somewhere": Decentralized spatial computing for geosensor networks

Increasingly, computing happens somewhere, with that geographic location being important to the computational process itself. This talk is concerned with the foundations of computing with information *about* dynamic geographic phenomena at the same time as computing *in* geographic space. Traditional models of spatial computing are typically founded on the assumption that geographic information is contained in discrete information silos, like GIS or spatial databases. However, emerging distributed spatial information technologies, like geosensor networks (GSN), present challenges to these traditional models, making it is necessary to compute simultaneously in and about geographic space, with no centralized control. The talk introduces the foundations of "computing somewhere", and proposes a technique for designing and analyzing decentralized spatial algorithms suitable for use in computing environments like GSN. The talk examines some specific examples of decentralized spatial computing algorithms, including decentralized algorithms for computing quantitative and qualitative characteristics of spatial and spatiotemporal regions; and some specific applications of decentralized spatial computing, including environmental economics and conservation contracts.

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informelle Kaffeerunde: 16:00

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