

Spatial Optimization for Sustainable Land Use Planning

Speaker: Dr Cao Kai
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Chair: Dr Winston Chow, Department of Geography, NUS

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Abstract

Sustainability often represents a primary goal for land use planning. Comprehensive sustainability in land use planning can be defined as a long-term balance between economic development, environmental protection, efficient resource use, and social equity.

To pursue this balance spatially and intelligently, a series of loose coupling models and technologies from the perspectives of Spatial Optimization, GIS and Cyberinfrastructure have been developed and employed to create the optimal/near-optimal land use planning scenarios to support the sustainable land use planning. The proposed framework could also be flexibly adapted to other spatial optimization problems and shed light on the emerging research domain of Spatial Optimization, GIS and Cyberinfrastructure.

About the Speaker



Dr. Kai Cao holds a Ph.D. degree in Geography from the Chinese University of Hong Kong in Hong Kong and obtained his B.S. and M.Phil. degrees in Geography from Nanjing University in China. Prior to joining Department of Geography at NUS, he had also worked in Center for Geographic Analysis at Harvard University, Department of Geography at University of Illinois at Urbana–Champaign, and World History Center at University of Pittsburgh respectively.

His current research interests center on GIScience and its applications, especially on the topics of spatial simulation and optimization, cyberinfrastructure and geocomputation, land use planning support and urban mobility.

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