Call for Papers

1st ACM SIGSPATIAL Workshop on Sustainable Mobility (SuMob 2023)

The ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems will hold a half-day workshop on Sustainable Mobility. This is a first of its kind, and distinct from other workshops on mobility at this conference: it explicitly asks for research contributions studying greenwashing, adversarial consequences of efficiency improvements, and the complex system of access in the city as a whole.

Spatial data analytics has a lot to contribute here.

Mobility and accessibility are central prerequisites for social integration and participation, exchange, employment and prosperity in our society. Transport causes many negative environmental impacts through the emission of greenhouse gases (for example, in Germany traffic causes around 20% of greenhouse gas emissions), air pollutants and noise, as well as through its high consumption of resources over their lifecycle, including space. Electric vehicles are not exempt. Traffic also cuts into liveability of our cities and public health through passive lifestyle.

Thus, there is a strong need to shift the mobility systems worldwide towards sustainable solutions. Sustainability is often aimed at by **avoid, shift, reduce** principles: Avoiding trips by not making them at all, substitute a trip by an online activity instead or by choosing a closer destination that can be reached by active mobility; shifting trips to active or public transport or shared forms of mobility; and reducing energy or space consumption by using more environmentally friendly technology.

There are a number of factors involved in these three principles, i.e., in aiming at sustainable mobility: Those addressing infrastructure and the commons – urban planning, transport planning, policy setting, - and those addressing individual behaviour and culture. How can basic functionalities of life become accessible again for all people to unburden them from having to invest time and money in motorised trips? How can regulatory frameworks support the behavioural shift to more local lifestyles where basic functionalities are already accessible, such as in dense urban areas? The current challenge in this kind of systems thinking about sustainable mobility, however, is a lack of tools to assess the impact of any intervention at system scale. And this is a domain of spatial and spatiotemporal simulation, data analytics, and prediction.

An additional challenge for the geospatial community lies in creating awareness and also transparency about mobility effects and also about alternatives. To this end, adequate communication and visualisation methods are needed.

Topics thus include, but are not limited to:

- Make real costs of mobility transparent, including its impacts across other sectors (e.g., energy, environment, logistics, public health)
- Explore and assess environments that support sustainable mobility (e. g., 15 min centers)
- Investigate and quantify transport fairness
- Explore new forms of impact communication and visualisation (e.g., mobility carbon budgets)

- Investigate how to substitute personal motorised trips in regions lacking supply with (some) basic functionalities
- Elicit decisive parameters for route choice and choice of transportation mode to nudge travellers to a more sustainable mode
- Support sharing principles (e. g., car sharing, ride sharing) and its integration with mass transportation
- Manage distribution of traffic in favour of active mobility or shared mobility at the expense of individual motorized traffic
- Explore alternative concepts for urban logistics
- Investigate ways of communication and visualization of transportation options
- Extend simulation models taking sustainability into account
- Develop Machine Learning and AI approaches to address sustainability challenges
- Develop ideas and concepts for mobility as part of complex system (land use, environment, waste, energy, logistics)
- Devise Decision support tools, methods and data analyses to support sustainable policy making

We invite full research papers (8-10 pages) short research papers (4 pages) and vision papers (2 pages) and provide ample opportunities for discussions, e.g., in breakout groups.

Program Committee

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Workshop chairs

- Monika Sester, Leibniz University Hannover, Germany
- Stephan Winter, The University of Melbourne, Australia
- Alexandra Millonig, Austrian Institute of Technology, Austria
- Francisco Pereira, Technical University of Denmark, Denmark

Important Dates

- Paper submission: Friday, August 25, 2023
- Notification of acceptance: September 22, 2023
- Camera ready papers due: September, 29, 2023

Links

- Workshop Webpage: https://www.ikg.uni-hannover.de/de/workshop
- Main conference: https://sigspatial2023.sigspatial.org/