Paper 17.2

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Title	SIMETRI: socio-spatial inequalities and human mobility in megacities
Synopsis	The research relies on SIMETRI project and focuses on urban inequality from the perspective of human mobility. Specifically, activity space concept and human mobility big data are applied to measure social differentiation and exclusion.
Abstract	The rapid growth of the population in mega-city regions is causing severe problems of social segregation, mobility, and income inequalities. To deal with these issues, new and powerful analytical approaches, such as those being developed employing real-time big data sources and new computing technologies, are required. The research project SIMETRI (SustaInable Mobility and Equality in mega-ciTy RegIons: patterns, mechanisms and governance) aims to develop a world-class science platform relevant to political decision-makers responsible for housing, transport, employment and urban development in the world's biggest mega-city region, the Pearl River Delta Greater Bay Area. Determining the inequalities in daily mobility across social or income groups serves as the first step toward developing effective interventions. Under the SIMETRI project, we take advantage of two kinds of human mobility data to provide evidence of the differences in activity spaces between different social groups. Taking Shenzhen, a mega-city in Greater Bay Area, as a case study, we first explore the activity differentiation by income status by using three kinds of different methods of characterising human mobility patterns. Then we leverage two types of transport data (public transit records and private car data) to examine the disparities in activity participation between the two social groups by transport mode. In combination with evidence from the two cases, we found that income status might be not the dominant factor determining activity spaces and transport mode plays a vital part in inequality in access activities and urban opportunities. Having this knowledge may provide more targeted implications for related policy to detect and reduce potential social exclusion for disadvantaged groups. The analytical framework and methods also have implications for a more in-depth assessment of mobility and social exclusion in other urban contexts as well.
Further reading	SIMETRI: https://simetri.uk/ Gao, Q. L., Yue, Y., Tu, W., Cao, J., & Li, Q. Q. (2021). Segregation or integration? Exploring activity disparities between migrants and settled urban residents using human mobility data. *Transactions in GIS*, *25*(6), 2791-2820.