
Theme of Research

SUSTAINABLE URBAN MOBILITY AND ACCESSIBILITY

Summary

Research activity: investigation of the relationship between transport mobility and land use in urban regions; investigating the effectiveness of infrastructure development, administrative-regulatory measures, and economic measures to achieve sustainable mobility and accessibility in urban regions. Methodological approaches: statistical analysis, machine learning, simulation modelling, use of the agent-based model MATSim. Applicant requirements: basic knowledge of statistical methods, machine learning methods and computer simulation methods, programming languages JAVA, Python and R and interest in further improving these skills and knowledge. Expected results:

First year: publication of a „review article“ in a peer-reviewed journal,
Second year: submission of an article to the review process in journal with an impact factor (Jimp result type),
Third year: an accepted article in a journal with an impact factor (Jimp result type). Publication of results and dissertation in English. Active involvement in scientific research projects. In the study application, the applicant encloses a letter of motivation, which will describe the fulfilment of the above-mentioned requirements, and at least one week before the final application deadline, applicant contacts the supervisor and discusses possible cooperation with him.

Program

Smart Cities

Form

Full-time

Number / Department

15121 / Department of Spatial Planning

Supervisor

doc. Ing. arch. Jakub Vorel, Ph.D.

Supervisor Specialist

prof. Ing. Ondřej Přibyl, Ph.D.

Grant / Research Connection

EF17_048/0007435: Smart City – Smart Region – Smart Community, aplikace modelu MATSim pro simulaci dopravních opatření v ORP Ústí nad Labem, co-researcher, 2018–2023, Successfully submitted project application OP JAK Mezisektorová spolupráce: Udržitelná mobilita 2030+. If the project is approved, the doctoral student will be involved in its team.

Connection with the Department's Priority

P6/ Sustainable mobility and settlement structures

Theme of Research

**ECONOMIC EVALUATION OF PUBLIC GOODS
USING HEDONIC PRICE METHODS**

Summary

Research activity: estimating the value of public goods and especially public infrastructure based on its price effects on traded real estate. Methodological approaches: spatial regression analysis and other machine learning methods, the use and development of the val4plan tool. Applicant requirements: basic knowledge of statistical methods, machine learning methods, programming language R and possibly Python and interest in further improving these skills and knowledge. Expected results:
First year: publication of a „review article“ in a peer-reviewed journal, Second year: submission of an article to the review process in an journal with impact factor (Jimp result type), Third year: accepted article in journal with impact factor (Jimp result type), publication results and dissertation in English. Active involvement in scientific research projects and participation on the development of the val4plan tool. In the study application, the applicant encloses a letter of motivation, which will describe the fulfilment of the above-mentioned requirements, and at least one week before the final application deadline, applicant contacts the supervisor and discusses possible cooperation with him.

Program

Smart Cities

Form

Full-time

Number / Department

15121 / Department of Spatial Planning

Supervisor

doc. Ing. arch. Jakub Vorel, Ph.D.

Supervisor Specialist

prof. Ing. Ondřej Příbyl, Ph.D.

Grant / Research Connection

TL03000695: Modely oceňování veřejných statků pro účely prostorového plánování, main researcher, 2020–2023, Involvement of a doctoral student in the application of project results according to the sustainability plan. Intention to apply for GAČR, TAČR grants with the intention of involving a doctoral student in project solutions

Connection with the Department's Priority

P3/ Innovation of tools for planning and management of territory

Theme of Research

TRAFFIC GENERATION FACTORS

Summary

Subject of the scientific research: research of current trends of the traffic generated by different types of land use, with an accent to investigate the conditionality of the volume of traffic generated and the division of transport work by the layout of the territory, the structure of the built-up environment and the mutual relationship between sources and destinations of traffic in the territory and the traffic behaviour of different users of the territory. Emphasis will be placed on the investigation of traffic generated by dynamically developing land use and activities in the area, such as typically city logistics, e-commerce, concentrated areas of workplaces, recreational use of land, etc. Remarks: publication of results and dissertation in English, the applicant must contact the supervisor at least one week before the deadline for submission of the application and agree on details.

Program

Architecture and Urbanism

Field of Study

UUP / Urban Design and Spatial Planning

Form

Full-time

Number / Department

15121 / Department of Spatial Planning

Supervisor

Doc. Ing. arch. Veronika Šindlerová, Ph.D.

Supervisor Specialist

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Grant / Research Connection

TA ČR Doprava 2030: Inovativní metody stanovení intenzity dopravy generované územím. Planned research, expected submission of the project proposal in spring 2024.

Connection with the Department's Priority

P1/ Sustainable territorial development: regeneration of urbanized territories, city of short distances, availability of public infrastructure, economically, ecologically, and socially sustainable use of territory
P6/ Sustainable mobility and settlement structures
