

The Czech Technical University in Prague, The Department of Hydraulics and Hydrology has vacancy for

Junior Postdoctoral Researcher in *Real-time city rainfall mapping using data acquired from dense network of commercial microwave links*

Your research will focus on the development of a real-time reconstruction procedure for rainfall mapping at city scale using path-integrated rainfall observations retrieved from microwave links, radio connections used within cellular backhaul.

Rainfall information is a crucial input for water management in cities, particularly design, optimization, and control of sewer systems and waste water treatment plants, flood early warning, etc. Standard rain-gauge networks are usually insufficiently dense and weather radars are affected by large uncertainties and measure rainfall several hundreds of meters above ground. Data on microwave link attenuation, monitored by mobile phone operators for network management purposes, can be used to estimate rainfall intensity.

Several techniques for reconstructing rainfall spatial distribution from path-integrated observation of commercial microwave links have been developed during last decade. However, obtaining reliable rainfall gridded product in the real-time mode is still a challenge. The desired technique should be able to assimilate high number of observations from microwave link network and ground stations and provide in near real-time (delay max. 1 min) the rainfall gridded product with high temporal and spatial resolution (1 min / 500 x 500 m²). The method will be developed and validated on real dataset from the city of Prague containing observations from approx. 1000 CMLs and 23 rain gauges.

You will be part of the interdisciplinary research project Tel4Rain (“High resolution rainfall product using telecommunication microwave links”), where we collaborate with hydrologists, urban water engineers, radio engineers and IT specialists as well as with relevant stakeholders (e.g. City of Prague and T-Mobile CZ,). The position requires good interpersonal skills with the desire and the ability to work collaboratively and effectively in a team environment. The candidate will be encouraged to collaborate actively with our international partners and expected to present the results on a relevant international scientific conference and/or in a peer-reviewed journal.

The ideal candidate must have a recent Ph.D. degree in applied mathematics, geostatistics, data analysis, meteorology, remote sensing or similar discipline. Programming skills are required, academic



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skills proven by relevant publication record are desired.

The position is funded from EU Mobility program for duration of 6 months (start from September 1st 2019). The position is open for a researcher from a foreign country or a researcher who has spent at least 2 years during the period of past 3 years doing research abroad. The salary based on the conditions of the call covering the cost of living in the Czech Republic is 2.400 EUR brutto (app. 1.750 EUR netto) per month.

Please submit your application including a CV, a brief statement about your motivation for this position, copies of your academic qualifications and names of two potential referees in electronic form as a single PDF file to vojtech.bares@cvut.cz

For further information, please contact Dr. Vojtěch Bareš, vojtech.bares@cvut.cz.

Deadline for applications is **June 3rd, 2019** or until the position is filled.