



## Call for grantee(s) within OpenSense Short-Term Scientific Mission Grant

**Urban hydrology group** at Czech Technical University welcome **grantees for Short Term Scientific Missions (STSMs)** related to **the topics of OpenSense Action**. Our research concerns rainfall monitoring and urban rainfall-runoff modeling with commercial microwave links (CMLs). We collect data from more than 2500 CMLs around the Czech Republic and collaborate with T-Mobile CZ and water utilities on an operational CML rainfall monitoring system for urban water management. Our group also maintains its own measurement setup complementing CML observations with rain gauges, a disdrometer, and several temperature and humidity sensors.

### Grantee visiting CTU can contribute to one of the following research projects:

- Rainfall-runoff modeling with CMLs focusing either on uncertainty assessment and identification of rainfall-runoff and CML-rainfall-retrieval model parameters or on fast surrogate models or black-box data-based models capable of operational (real-time) CML-based runoff predictions
- Analyzing effect of variable drop size distribution on attenuation of EM waves at E-band frequencies using dedicated experimental layout, where E-band CML operated within cellular backhaul is completed with rain-gauge and disdrometer observations.
- Country-wide analysis of E-band outages. Evaluating the effect of outages on rainfall retrieval and feasibility of E-band CML use for monitoring heavy and extreme events.

Or alternatively the research project can be specified by an applicant covering the scope of OPENSENSE Action and activities of CTU Urban Hydrology group. The applicants can gain access to i) almost 5-year long dataset from about 250 CMLs in Prague CZ and 23 reference city rain-gauges data, ii) dataset from a dedicated campaign in small urban catchment Prague-Letnany with 2 years of runoff observations and rainfall observations from seven rain gauges and 19 CMLs covering the catchment, iii) countrywide dataset of approx. 2500 CMLs including more about 700 CMLs operating at E-band.

The preferred duration of STSM is upon the applicant. However, the proposal has to meet all the criteria given in **Call for STSM (Short-Term Scientific Mission) – 2023** and also general eligibility criteria given by COST Association for STSM grants.

In case of interest, contact Vojtěch Bareš ([baresvoj@cvut.cz](mailto:baresvoj@cvut.cz)) or Martin Fencl ([martin.fencl@cvut.cz](mailto:martin.fencl@cvut.cz)).

**About OPENSENSE (COST Action CA20136).** *OPENSENSE brings together scientists investigating different opportunistic sensors (e.g. microwave links, citizen science), experts from weather services, and end-users of rainfall products to build a worldwide reference opportunistic sensing community. Further details about the grants can be found here: <https://opensenseaction.eu/grants/mobility-grants/>*