

## **A methodology for rapid inundation mapping for a megacity with sparse data: case of Mumbai, India**

**K. GUPTA & V. NIKAM**

*Indian Institute of Technology Bombay, Mumbai 400076, India*  
[kgupta@civil.iitb.ac.in](mailto:kgupta@civil.iitb.ac.in)

**Abstract** Mumbai, India has chronic problems related to urban flooding and it experiences waterlogging every year. To combat this, a Disaster Risk Management Master Plan integrating various disasters like floods, earthquakes and cyclones is presently being developed for the Municipal Corporation of Greater Mumbai. As part of this plan, a flood risk assessment (FRA) of the city has been carried out using best available data for two scenarios – continuous rainfall at 50 mm/h for one hour and 100 mm/h for one hour corresponding to a return period of 2 in 1 year and 1 in 1 year, respectively. The areas expected to be submerged by these rainfall intensities have been delineated. Subsequently the number of people likely to be affected by flooding in the ward has been estimated. This estimate will help in formulating mitigation measures like shelters, evacuation paths and planning for transport route diversions.

**Key words** megacity; urban flooding; flood inundation; flood risk; shuttle radar topography mission