PROJECT FACTSHEET

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MOSQUITO

Improving flood management in urban areas thanks to the latest satellite remote sensing technologies



INSPIRATION

Understanding both the origins and mechanisms of flood events is primordial for public administrations in charge of managing the associated crises. They can, for example, better identify vulnerable areas or organise search and rescue, medical assistance as well as emergency evacuation. But, this is also the case for the insurance sector that requires information on flood occurrence within defined areas so to adapt their products and services. LIST already worked on series of research and development projects targeting the efficient use of space technologies for improving our society's capacity to monitor and predict floods at large scale. It takes now advantage of the latest technological advances - where improved temporal and spatial coverage of remote sensing data lays the foundations for a prompter and better response to flood events at global scale - so to put an emphasis on urban areas.

INNOVATION

The project will exploit new satellite-based Earth Observation technologies so to provide innovative and technically sound answers to user needs in the field of flood management in urban areas. Using enhanced SAR satellite data, the MOSQUITO project's ambition is to advance urban flood risk management by developing novel flood mapping algorithms that take into account the Synthetic Aperture Radar Interferometric (InSAR) coherence and innovative solutions for optimally combining remote sensing-derived flood extent maps and hydrodynamic modelling via advanced data assimilation techniques. By exploiting the potential of new observation data, the project will thus develop new methods enabling the accurate, systematic and automated monitoring of floods in urban areas.

IMPACT

The methods, algorithms and models developed during the project will offer great opportunities for global applications, especially in poorly equipped regions in the world. The innovative combined use of large collections of remote sensing data with global hydrodynamic modelling through assimilation further has the potential to offer new solutions for improving flood risk assessment for many cities around the world, useful information for the insurance sector as well as administrations and civil protections in charge of flood crisis management.

Partners

CIMA Research Foundation (IT) , Italian Civil Protection (IT) , Centre Tecnològic de Telecomunicacions de Catalunya - CTTC (SP) , Swiss Re (CH)

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