



Acronym – SAR-CLIMARIS

Title – Advanced Monitoring through MT-InSAR techniques for Infrastructural Resilience and Safety in Climate Risk contexts

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Department – Department of Architecture and Arts

Iuav Role – Single Coordinator

Duration – 15 months

Start – 17/06/2024

Closure – 16/09/2025

Project budget – 119.999,75 €

Iuav budget – 119.999,75 €

Funding to Iuav – 119.999,75 €

Source of funding – Cascade Call for Universities and public research institutions supervised by the Ministry of University and Research, issued by the Polytechnical University of Turin, Spoke 6 TS2 – Multi Risk Resilience of Critical Infrastructures, “RETURN – Multi-Risk sciEnce for resilient commUnities undeR a changiNg climate” Enlarged partnership (PE00000005). Funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.3 – Funded by the European Union – NextGenerationEU.

Description – The SAR-CLIMARIS project aims at improving the resilience of critical infrastructures towards climate change-induced risks through the advance use of SAR-Multi-temporal interferometry (MT-InSAR) techniques.

Objectives – The aim of the project is the definition of an unmanned procedure for the satellite monitoring of infrastructures. The project will develop in subsequent phases: critical analysis of existing MT-InSAR algorithms in order to evaluate their limits and potential for application to the infrastructures; selection of a research area featuring a representative infrastructural network of existing infrastructures; adaptation and improvement of existing algorithms to solve the problems incurred in the standard application of MT-InSAR techniques to infrastructures exposed to the risks of extreme events, including weather-related events.

The unmanned procedure will be defined on the basis of the application of the improved algorithms, with the aim of providing a useful tool to stakeholders – including infrastructural network management authorities and administrations – which will allow the increase of the planning and reaction capacity in emergencies. SAR-CLIMARIS aims at defining a new standard in infrastructure monitoring by merging technological innovation with a holistic approach in climate risk management.