

MAY 14TH, 2026
ROOM CASTIGLIANO 2

This workshop brings together leading voices from structural engineering, dynamics and metrology to explore how existing telecom fiber-optic networks can be transformed into city-scale structural monitoring systems.

MORNING SESSION (9:00 – 13:00)

- **Dual-purposing telecom fiber-optic infrastructure for structural health monitoring and safety assessment**
A. Kanyilmaz, Politecnico di Milano
- **Laser interferometry on telecommunication fibers for structural sensing applications**
S. Donadello, INRIM
- **The MSCA-PF project FORESIGHT**
H. Ceylan, Politecnico di Milano
- **Stress-Field Estimation from Fiber Strain Data**
A. Menghini, Politecnico di Milano
- **The deployed telecom fiber network as a precious asset for smart and pervasive sensing**
P. Boffi, Politecnico di Milano

AFTERNOON SESSION (14:00 – 16:00)

- **Lessons learned from optical fiber strain measurements**
G. De Roeck, KU Leuven, Belgium
- **Operational modal analysis and long-term SHM of civil structures**
C. Gentile, Politecnico di Milano
- **Post-earthquake assessment frameworks, safety classification schemes, and pathways for integrating SHM data into decision-making**
A. Hortacsu, Applied Technology Council, USA

The day will close with a panel discussion among all speakers on open challenges and future directions for dual-use fiber-optic structural monitoring.



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ROOM CASTIGLIANO

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LINK TO REGISTER

<https://www.polimi.it/en/education/specializing-masters-and-postgraduateprogrammes/master-detail/563>

FOR MORE INFORMATION

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the European Union**

The workshop is part of the project MSCA-PF FORESIGHT "Fiber Optic-based Structural Health Monitoring", Funded by the European Union. Views and opinions expressed are however those of the authors only, and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.



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**DIPARTIMENTO DI ARCHITETTURA
INGEGNERIA DELLE COSTRUZIONI
E AMBIENTE COSTRUITO**

Dual-Use Telecommunication Fiber Optics for Structural Performance Assessment

WORKSHOP

OBJECTIVE

The workshop “Dual-Use Telecommunication Fiber Optics for Structural Performance Assessment” brings together leading international researchers and industry experts to explore the emerging paradigm of using existing fiber-to-the-home (FTTH) telecommunication networks as distributed sensing systems for structural health monitoring (SHM).

Unlike conventional approaches that require dedicated sensor installations, this paradigm leverages the millions of kilometers of optical fibers already deployed in urban environments, enabling city-scale structural performance assessment without additional infrastructure costs.

The event is organized within the research activities of the MSCA Postdoctoral Fellowship project FORESIGHT (Fiber-optic Based Structural Health Monitoring Using Home Internet Infrastructure), led by Politecnico di Milano. The objective is to facilitate scientific exchange among experts spanning the full research pipeline: telecom fiber-optic infrastructure and laser interferometry, to distributed acoustic sensing (DAS) technologies, to structural dynamics and vibration-based monitoring, to post-earthquake safety assessment and decision-making protocols.

By convening specialists from geophysics, structural engineering, metrology, photonics, and industry, the workshop aims to identify key scientific challenges, share state-of-the-art methodologies, and establish collaborative pathways for advancing dual-use fiber-optic sensing from laboratory validation to operational deployment in seismically active urban areas.



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From optical data to structural behaviour



Using local Laser interferometry units, 24/7 monitoring



Real life structural data

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Rapid response, scalable

