Surface wave analysis: solving ambiguities and pitfalls through multi-component data (3C nodes)

September 11, 2025 – Naples (Italy)

Surface-wave and vibration data analysis have become essential tools in engineering, geotechnical and seismic hazard studies. However, the most popular techniques are often based on oversimplifications or misconceptions, which can lead to erroneous assessments of subsurface conditions or structural behavior.

This seminar provides both a theoretical foundation and practical guidance on key aspects critical to accurate and effective seismic and vibration data acquisition and analysis.

Participants will explore how to overcome common challenges in data acquisition and processing, and how to enhance their results through the analysis of **multi-component data, in particular from 3-component (3C) nodes**.

The course includes real-world case studies to reinforce learning through practical examples.

A dedicated discussion and Q&A session will provide space for questions, in-depth clarifications, and the exchange of experiences among participants.

PROGRAMME

- **Body wave refraction and surface wave analysis: beyond legends with physics**
- **Data acquisition and analysis: the several active and passive options**
- **A critical overview over the most common misunderstood acronyms: MASW, ReMi, ESAC, SPAC, HVSR, HS, MFA/FTAN, MAAM**
- **Revealing surface wave properties and inverting them: various options for these two critical steps (modal curves, effective curve, *Full Velocity Spectrum* analysis)**
- **Joint analysis of seismic data: fundamentals**
- **Site amplification: legends and evidences from SSR**
- **2D Vs profiles: various active and passive methodologies**
- **Vibration analysis (buildings and bridges)**
- **Seismic cables *versus* seismic nodes: new opportunities**
- **Q&A and Discussion**

INFORMATION

Date: September 11, 2025
Duration: 4 hours
Language: English
Location: *To be confirmed* (near the EAGE *Near Surface Geoscience* Conference and Exhibition venue)
Speaker: Giancarlo Dal Moro

If you are interested in attending, please contact us as soon as possible at: info@winmasw.com specifying:

- Full name(s) of participant(s)
- Name of the company, University or research organization