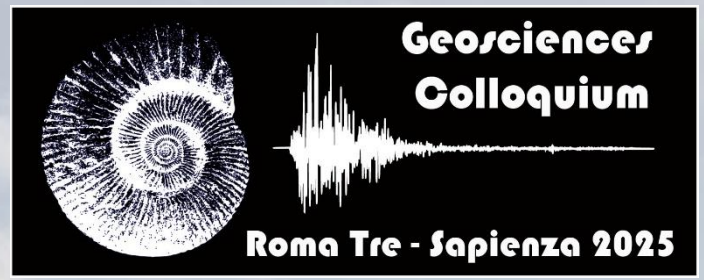
Roma Tre



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Into the woods of vibrational spectroscopies: Straying from traditional paths for new applications on Cultural Heritage

15.04.2025, Aula Lucchesi, h:16:30 and on Meet

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DOTTORATO DI RICERCA
IN SCIENZE DELLA TERRA

ABSTRACT

Vibrational spectroscopies , such as Fourier Transformed InfraRed (FTIR) and Raman Scattering techniques, represent powerful and well-assessed methodologies for the molecular scale characterization of complex matrices of interest in art and archaeology. The vibrational information achievable is highly versatile and it could be applied to different analytical problems, from the composition study of ancient materials, to the investigation of ageing and degradation processes, together with the evaluation of conservation solutions.

However, along with the standard experimental setups, a series of interesting strategies could be committed to diagnostic aims, providing novel information to the conservation scientists. Some new trends in the use of Surface Enhanced Raman Scattering methods will be deepened, such as the coupling with micro-sampling systems based on soft matter and nanostructured materials, for the identification of dyes and other analytes. The use of external and micro-reflection InfraRed spectroscopy for the study of archaeological and pictorial samples will be proposed, while the innovative applications of Optical Photo-Thermal InfraRed spectroscopy on Cultural Heritage represent a frontier for future developments of art diagnostics. Future perspectives of these advanced methodologies will be discussed, in order to provide new strategies to be deepened for the research in different conservation fields.