

Seminar

TERAHERTZ TECHNOLOGY APPLIED TO GEOSCIENCES



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26 March 2026, 12 hs.

Aula 7 – Edificio C-GEOLOGÍA

Facultad de Ciencias



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Seminar Overview: The lecture will begin with an introduction to Terahertz (THz) technology (100 GHz–10 THz) and its wide range of scientific and technological applications.

Next, the measurement platform developed at the CROMA Laboratory will be presented, highlighting its advanced instrumentation and experimental capabilities.

The seminar will then focus on the application of THz technology to geosciences, a pioneering research direction that we initiated and have uniquely developed in Europe over the past five years. In particular, results obtained from oil shales will be discussed, including THz imaging of organic matter, characterization of THz dielectric permittivity anisotropy and fabric, and imaging of early-stage thermal transformations. Additional applications to be presented include fracture detection in rocks and the use of THz measurements for assessing rock porosity.

Although these electromagnetic signals may seem unfamiliar to the general public, they are widely integrated into everyday technologies, including 5G communications, airport security screening systems, medical devices, spectroscopy, and automotive proximity sensors.