



Miércoles 8 de NOVIEMBRE 2023
12.00 h

Sala de Grados
Facultad de Ciencias

INMA

Impulso

Microcalorimetry at millikelvin temperatures:

On truly counting optical photons and high-resolution radionuclide spectrometry

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Microcalorimeters operated at millikelvin temperatures are highly versatile detectors of radiation and particles that can provide the highest resolving powers for energy dispersive detection. The development of microcalorimeters over the last about 15 years has been driven by fundamental physics experiments and astrophysical instrumentation. However, these detectors have increasingly been used in applied physics, metrology or material sciences.

The talk will address two types of microcalorimeters: superconducting transition edge sensors (TESs) and metallic magnetic calorimeters (MMCs) and their readout by means of dc SQUID current sensors. Two metrology-related applications will be discussed, namely quantum radiometry in the VIS/NIR range with photon number resolving TESs and MMC-based decay spectrometry for improved radionuclide metrology.