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## THz Spectroscopy and Imaging

*Friday, October 15, 2021 10:50 AM (25 minutes)*

In this talk, I will give an overview of some of the THz activities carried on in two main laboratories in Sapienza University and respectively located at the SBAI and Physics departments. Together the laboratories present state-of-the-art “compact” THz technology working both in the frequency and time domain. In the frequency domain a high-resolution coherent detection spectrometer exploiting photo antennas as infrared-to-THz transducer can be used as well as QCL laser system. In the time domain different set-up can be used to generate THz. Low energy THz pulses can be produced by photo antennas or laser induced air-plasma while higher energy pulses can be supplied by two main techniques: optical rectification and two-color plasma. Moreover, the laboratory is equipped also with a room-temperature 2D bolometer camera for imaging applications.

In this talk I will first describe the THz sources and set-up, and then I will focus on two main research fields: characterization and detection of substances of national interest and high intensity THz generation and manipulation for application as accelerator technology and spectroscopy. I will finish with some perspective.

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**Session Classification:** TERA (THz/IR scientific case)