

# Metodi sperimentali per la determinazione di struttura e proprietà elettroniche di sistemi aggregati di bassa dimensionalità

## Experimental Methods for the Determination of the Structure and the Electronic Properties of Low-Dimensional Solid Systems

(January/February-May 2020)

Basic Module, ~ 40 hours:

### Interazione radiazione-materia, spettroscopie di fotoemissione e assorbimento / Interaction of Electromagnetic Radiation with Matter, Photoelectron Spectroscopy and Absorption

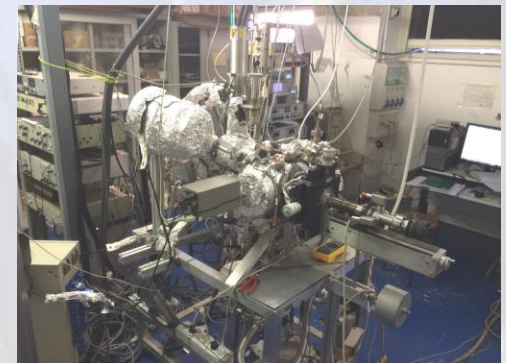
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**Basic Theory and Experimental-Instrumental methods** - Electron-matter and Electromagn.-matter interaction – **Photoelectron Spectroscopy**, angular-resolved photoemission, band structures – Auger electron spectroscopy – core level and chemical bondings - **Low-D Systems and Nanostructures** – Multiple-Scattering - **X-Ray Absorption**, EXAFS and XANES - Introduction to **Synchrotron Radiation** and to the new Free-Electron Laser (FEL) sources

Specialistic Module/s (~20 hours):

- **V. Foglietti (CNR, Roma Tre):** Micro and nano-fabrication techniques
- **G. Capellini (Roma Tre):** Microscopy techniques
- other modules available at Roma Tre

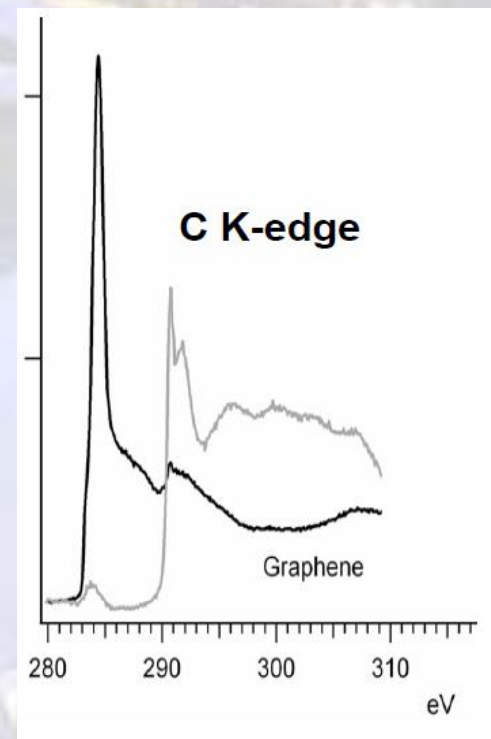
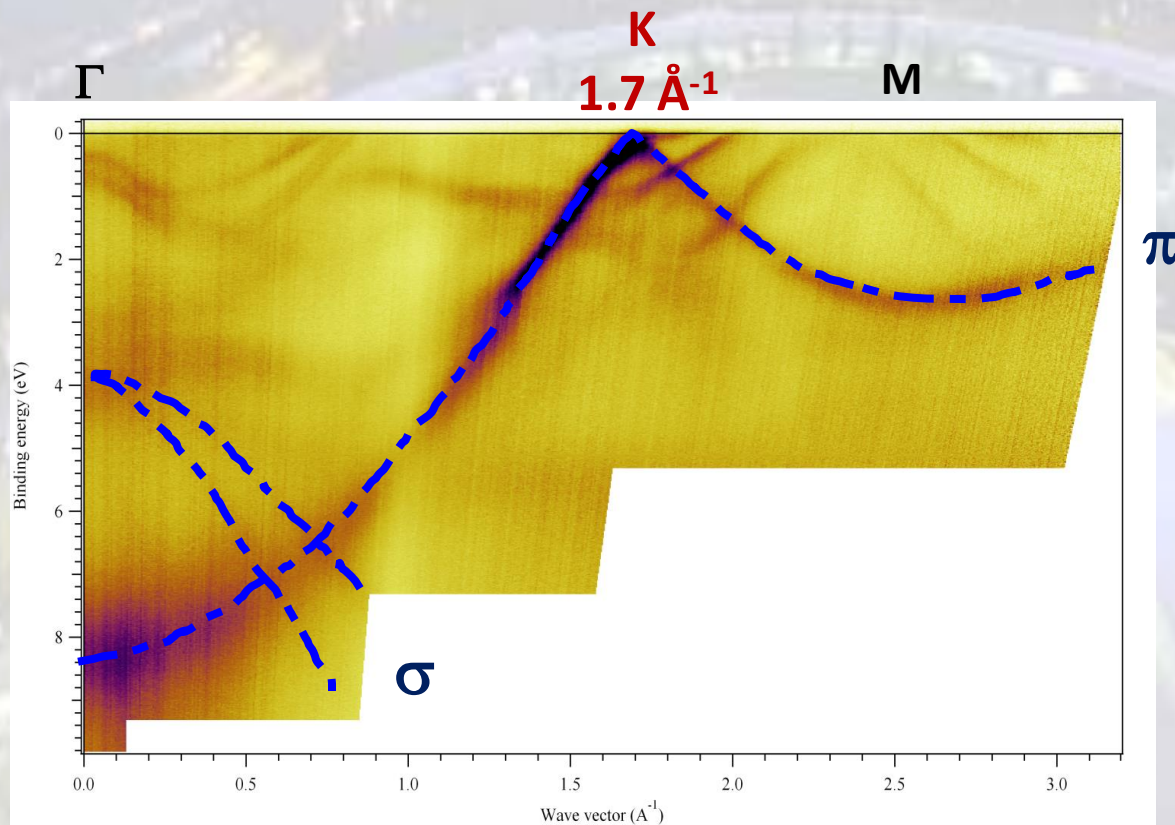


# Interazione radiazione-materia, spettroscopie di fotoemissione e assorbimento

## Interaction of Electromagnetic Radiation with Matter, Photoelectron Spectroscopy and Absorption

(January/February-May 2020)

### ARPES: experimental band structure of graphene (real 2D system)



$$E(\mathbf{k}) = \pm t \sqrt{1 + 4 \cos(\sqrt{3}ak_y/2) \cos(ak_x/2) + 4 \cos^2(ak_x/2)}$$