



Institut de Minéralogie et de Physique des Milieux Condensés
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SÉMINAIRE

Jeudi 31 mars, 10h30

*Salle de Conférence, 4ème étage, Tour 22-23, Salle 1
IMPMC, Université P. et M. Curie, 4, Place Jussieu, 75005 Paris*

Francesco MAURI

IMPMC

EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT RAMAN SPECTRA OF GRAPHENE (BUT WERE AFRAID TO ASK).

I will present an approach [1] that allows the ab-initio calculation of shape, intensity and position of defect-activated (D, D', D'') and 2-phonon (D+D'', 2D, 2D') resonant Raman peaks in graphene. We also reproduce the weaker 2-phonon bands, that involve acoustic branches and that have recently been measured in graphene. Our (parameter-free) simulated spectra closely reproduce the measured spectra and their evolution with the laser energy and defect concentration. The detailed description of the Raman process allows us to identify the most relevant phonons, scattering events, and defect types involved in each peak.

[1] P. Venezuela, M. Lazzeri, F. Mauri, to be published.