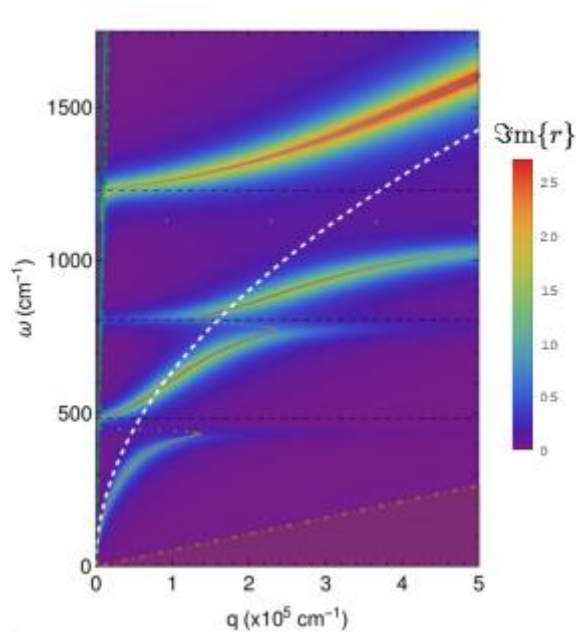


## Basic Notions in Graphene Plasmonics

N. M. R. Peres

University of Minho, Department and Center of Physics, 4710-057, Braga, Portugal

In this talk we discuss basic notions of graphene plasmonics in the mid- and far-infrared spectral regions. We first compare some elementary properties of metal plasmonics versus graphene plasmonics in those spectral regions. We then move to the physics of surface plasmon-polaritons in a continuous graphene sheet. It follows a discussion of the methods for exciting SPP's in graphene. Subsequently, the properties of a periodic micro-ribbons grid and its potential application in biosensing is discussed. The case of graphene nano-structures is also briefly considered. The coupling of SPP's to phonons is analysed.



**Figure1.** Spectrum of surface phonon-plasmon-polaritons of graphene on SiO<sub>2</sub>

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### References:

P. A. D. Gonçalves and N. M. R. Peres, *An Introduction to Graphene Plasmonics*, (World Scientific, 2016)