The Inelastic light scattering in carbon nanostructures from bulk to nano

Ado Jorio
The Federal University of Minas Gerais, Brazil

Graphene-related materials have been considered prototypes for the development of nanometrology due to their potential applications in different fields, such as biomedicine and soil science, and because they serve as reference materials. The use of optics to address nanoscience has the limitation of using wavelengths in the range of hundreds of nanometers to microns to probe a much smaller system. Nanotechnology offers some solutions to overcome this measurement limitation, such as exploring resonance phenomena or using plasmonics to localize light into nanometer sized areas. In this talk I will discuss these aspects of nanoscale photo physics, including a novel and interesting effect of virtual phonon mediated correlation between the Stokes and the anti-Stokes light scattering.