Contribution ID: **26** Type: **not specified**

# Super-resolved Imaging, a melting pot for research groups and small enterprize

*Tuesday, 13 October 2015 09:40 (20 minutes)*

Although imaging has gone a long way from the crude microscopes and telescopes of early astronomers and natural scientists, it is a fact that every biology, material science, medical, and even electronics lab still uses visible light as its first and most readily available inspection instrument. How far can a visible imaging system be pushed? Efforts aimed at eluding in simple and straightforward ways the all-important Abbe limit, that is, the limit associated to the wavelength of visible light, are an ongoing and common effort both of photonics research groups and of photonics research and development in commercial enterprizes. Although research groups have partially overcome the Abbe limit, realizing what is known as a super-resolved system, the ability to transform these discoveries into commercial assets is a challenging task. Part of this difficulty lies in the fact that both small enterprizes on our territory and research groups are of limited size and hence cannot support the variety of imaging techniques that are needed to validate the super-resolved techniques. So, for example, a two-photon-absoprtion microscope requires an infrastructure that in itself is larger than the typical imaging team and this would only cover one specific super-resolution scheme. Validation would probably find great benefit from a multifaceted validation of super-resolved imaging, spanning from Terahertz up to UV radiation, with both scanning, real-time, temporally resolved and spectrally resolved imaging and microscopy. An even more ambitious goal would be to provide validation with wholly different technologies, such as x-ray fluoroscopy in medical scenarios.

**Primary author:** Dr DEL RE, Eugenio (Dipartimento di Fisica - Universita' di Roma La Sapienza)

**Presenter:** Dr DEL RE, Eugenio (Dipartimento di Fisica - Universita' di Roma La Sapienza)

**Session Classification:** Sessione "Infrastrutture Esistenti"