Scattering Assisted Localization Fluorescence Imaging IIT, CLNS@SAPIENZA Roma

Usually the resolution of an optical system is defined by the objective lens. In a recent paper we demonstrate that, if the object under investigation is opaque (like clouds or tissue), it is possible to surpass the limit in resolution provided by the collection optics. We developed a custom deconvolution algorithm which, together with a speckled illumination, enables to reconstruct the image of a fluorescent biological sample. We demonstrated the effectiveness of our technique retrieving high resolution images on neurons cell cultures and brain tissue.