Super-resolution analysis of structured illumination microscopy

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Although physicists found a theoretic lower bound for the resolution of light microscopes in the 19th century, many researchers developed methods to overcome this diffraction limit in the last decades. Structured illumination microscopy is one of these inventions and it became a widely used tool in biological and medical applications. At the beginning of this talk, we will present the fundamental physical background of the method. Afterwards, we will focus on the mathematics of the underlying imaging algorithm. In particular, the case of sparsely labelled samples will be addressed.