

Diffraction Imaging with Coherent X-rays

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When a coherent diffraction pattern of a finite sample is sampled at a spacing finer than the Nyquist frequency (*i.e.* the inverse of the sample size), the phase information is embedded inside the diffraction pattern itself and can be directly retrieved by using an iterative process. In combination of this oversampling phasing method with coherent X-rays, a new imaging methodology (*i.e.* coherent imaging) has recently been developed to determine the electron density of nano-crystals, non-crystalline materials and biological samples. In this talk, I will discuss the principle of the oversampling method and present some recent experimental results.