Licensing Opportunity   TTO – Technology Transfer Office
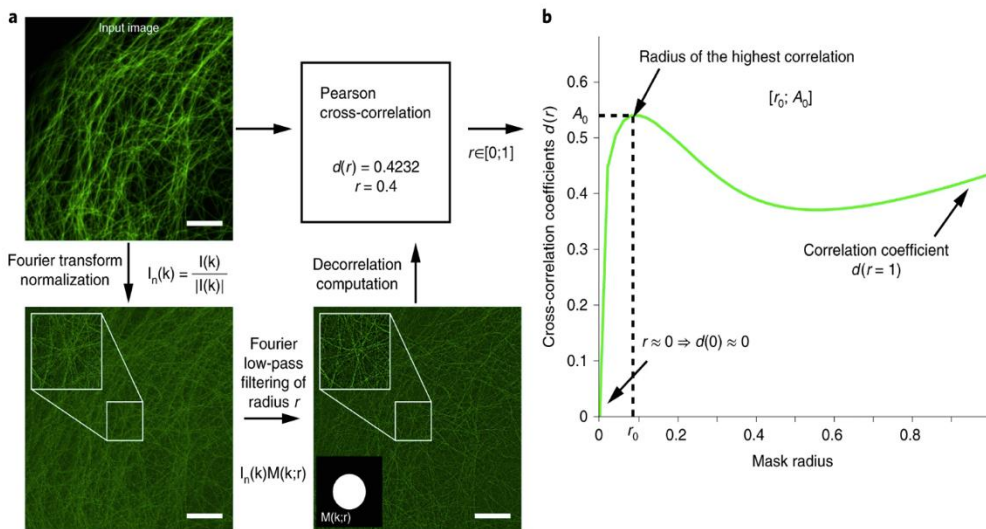
Parameter-free image resolution estimation

a, Cross-correlation of the image with its Fourier-filtered normalized version.
b, Cross-correlation coefficient as a function of the mask radius. r0, the radius with highest correlation, is related to the spatial frequency distribution of the input, thus to the resolution limit.

Description

The technology provides a new and objective way to quantify the effective resolution in super-resolution microscopy that, unlike other existing approaches, can work on a single image and that enables the optimization of image parameters both in real-time and post-processing.

The resolution estimator relies on decorrelation analysis (see Fig. a and b) of individual images without any user-defined parameters.

This new resolution estimate provides a powerful tool for expedited microscopy setup alignment, characterization and optimization as well as for automated microscopes. The software can also be used to quantify the performance of post-processing softwares.

Advantages

- does not require any user-defined parameters.
- Short computation time

Applications

- Super-resolution microscopy and Autonomous adaptive microscopy.
- 1D, 2D or 3D datasets: optical microscopes, atomic force microscopes, MRI, X-ray, TOF measurements, etc.

Opportunity

Licensing of patent and software, collaboration