定在エバネッセント光による超解像顕微法の研究

A Study of Super-resolution Microscopy with Standing Evanescent Light

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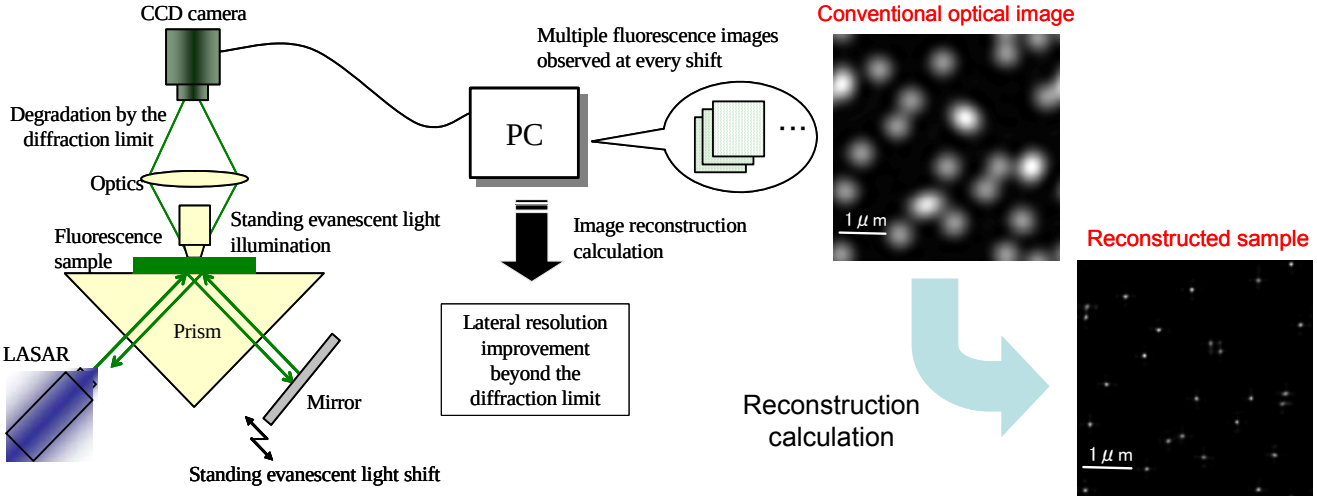
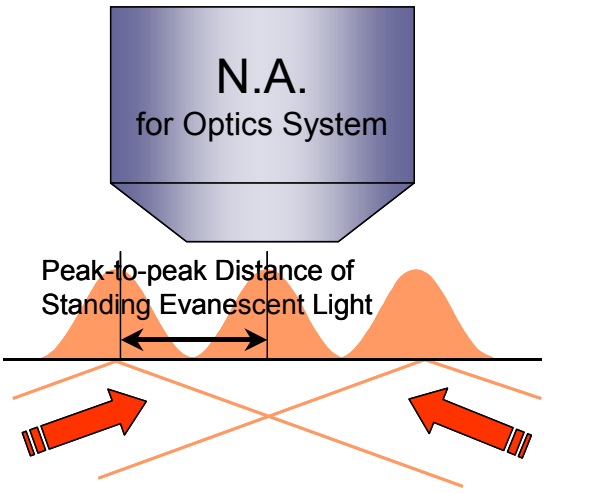
Abstract

回折限界を超えたナノメートル分解能を持つ，定在エバネッセント光を用いた超解像顕微法を開発する．

Schematic diagram of proposed microscopic system

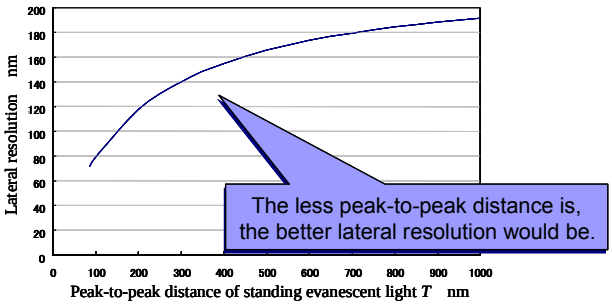


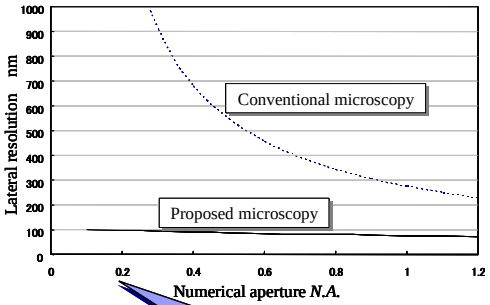
Characteristics of Resolution Power



$$lateral\_resolution = \frac{1.22}{f_c + f_m} = \frac{1.22}{\frac{2N.A.}{\lambda} + \frac{1}{T}}$$

Wavelength of light λ,
Peak-to-peak distance of standing evanescent light T
Numerical aperture of imaging optics ***N.A.***





Lateral resolution is comparatively better even under low N.A. condition.

Ref.) H.Nishioka, et. al., A SUPER-RESOLUTION MICROSCOPY WITH STANDING EVANESCENT LIGHT AND IMAGE RECONSTRUCTION METHOD , Proceedings of the 18th IMECO World Congress, 2006