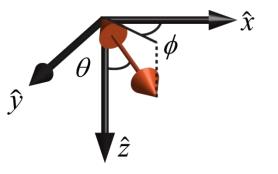
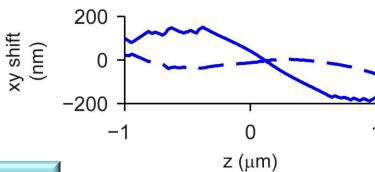


Simultaneous, accurate measurement of orientation and position using the Double-Helix Point Spread Function (DH-PSF)

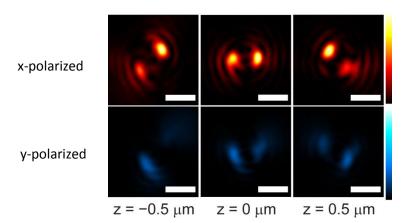




Molecular dipole orientation affects apparent lateral xy position

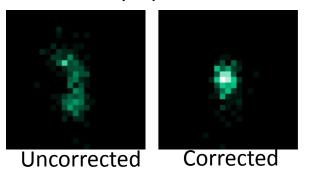


The DH-PSF allows one to simultaneously measure orientation and position, and correct localization error



Linear dichroism and lobe asymmetry are functions of (θ, ϕ, z)

xy localizations of a SM measured at many z positions



Backlund*, Lew*, et al. PNAS. Published online before print November 5, 2012