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기타소속:

강연제목: Dual-deconvolution 이광자 현미경 고품질 심층 조직 이미징/ Enhanced deep-tissue imaging with dual-deconvolution two-photon microscopy

Abstract):

Imaging in thick biological tissues is often hindered by sample-induced aberrations, resulting in degraded image quality and resolution. This is particularly problematic in super-resolution imaging techniques, such as structured illumination microscopy (SIM). In this work, we present a novel computational framework for correcting sample-induced aberrations in two-photon fluorescence imaging. Our approach is based on a matrix deconvolution capable of independently addressing and correcting both input and output aberrations. Notably, matrix deconvolution recovers higher spatial frequency content compared to traditional blind deconvolution. We validate the effectiveness of our method by comparing its results to those obtained using traditional blind deconvolution.

Brief Biosketch

Dr. Seokchan Yoon is currently an assistant professor at school of biomedical convergence engineering at Pusan National University, a position he has held since 2022. He earned a B.S. degree in physics from KAIST in 1998 and a Ph.D. degree in physics from Seoul National University in 2008. After completing his Ph.D., he worked in E-beam lithography at Samsung Electronics and conducted quantum optics research at University Bonn. He joined the Center for Molecular Spectroscopy and Dynamics at Korea University in 2016 to focus on super-depth biomedical imaging. His current research topics include high-resolution optical imaging in deep tissues, adaptive optics, and digital image processing.