

Super resolution fluorescence imaging using MUSIC: what aids and what fails MUSIC?

By

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Abstract

The phenomenon of fluorescence intermittence allows for super-resolution imaging in methods like PALM and STORM which require controlled experimentation. The need for super-resolution imaging in a less-controlled experimentation environment is undeniable for real-time dynamic experiments. Recently proposed multiple signal classification (MUSIC) satisfies this need and gives resolution of the order of ~ 10 nm for sparse emitters. It may be used with reasonable success for non-sparse emitter distributions as well. Being recently proposed, the strengths and weaknesses of MUSIC are still not fully explored. This presentation will discuss these aspects of MUSIC and set a realistic expectation for the performance of MUSIC.

Short Biography

Krishna Agarwal received her Ph.D from National University of Singapore in the year 2011 and B.Tech. degree from the Indian School of Mines, Dhanbad, India, in 2003. She has been selected for "Young Scientist Award" by Union Radio Scientifique Internationale (URSI) in the year 2011. Currently, she is a post-doctoral associate at Singapore-MIT Alliance research & Technology Centre since 2014. She was a research fellow at National University of Singapore from 2010 to 2014. She was a Scientist at the Defence Research and Development Organization, India, from 2003 to 2006 and worked towards the development of the front end of the active phased array radars. Her current research interests are electromagnetic, biomedical inverse problems, and microscopy.