

Séminaire



Partenariat Haute résolution Angulaire Sol-Espace

Salle de réunion P. Malavard

7 novembre 2008, **15 h 00**

Onera
29, avenue de la division Leclerc
92320 Châtillon

New approaches toward fluorescence background rejection

Boston University/Department of Biomedical Engineering

Résumé

I will describe a new method of obtaining optical sectioning with a standard wide-field fluorescence microscope. The method involves acquiring two images, one with nonuniform illumination (in our case, speckle) and another with uniform illumination (in our case, randomized speckle). An evaluation of the local contrast in the speckle-illumination image provides an optically sectioned image with low resolution. This is complemented with high-resolution information obtained from the uniform-illumination image. A fusion of both images leads to a full resolution image that is optically sectioned across all spatial frequencies. This hybrid illumination method is fast, robust, and provides a user-defined depth of field. Moreover it is generalizable to a variety of illumination and imaging configurations. Demonstrations will be presented of brain tissue imaging with a standard microscope and colon tissue imaging with an endomicroscope.