

How thick is your light sheet? A guide to quantitative measures

Several novel Light Sheet Fluorescence Microscopy techniques have emerged in recent years in pursue of good axial resolution over a long field of view. These include Bessel, Lattice and Airy beam light-sheet microscopy, among others. There has not been a direct comparison in the literature of their dimensions, and often different criteria are used among publications. Most of them present complex geometries that, in addition, are rapidly changing along the propagation direction, which makes the measurement troublesome. Here we propose a unified criterion to measure the length and thickness for all the currently available variants of light sheet. We have applied this methodology to our results of numerical simulations of the propagation of beams with the geometries stated above. Considering gaussian beams as the basis, we offer quantitative measurements and a direct comparison of the beams considered. With this we aim at providing a guideline for the scientific community on the choice of the most appropriate technique for their specific application.

Affiliation

IGBMC, France; Leica Microsystems GmbH, Germany

Terms and Conditions

Yes

Primary author(s) : Ms REMACHA, Elena (IGBMC, France; Leica Microsystems GmbH, Germany); Dr VERMOT, Julien (IGMBC, France); Dr FAHRBACH, Florian O. (Leica Microsystems GmbH, Germany)

Presenter(s) : Ms REMACHA, Elena (IGBMC, France; Leica Microsystems GmbH, Germany)

Session Classification : Posters