Adding SIM to a Spinning Disk has never been that easy

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Abstract

Last year, Nikon Team introduced you to X-light V3 Spinning Disk System from Crest Optics. This year you will have another chance to see it with on the top an additional modality called DeepSIM. DeepSIM is simple yet effective device at providing about twice the resolution of confocal imaging. It is an add-on modality that brings lattice SIM performance (light efficiency, high contrast, penetration depth) with an incredible ease of use.

Advanced optical design and engineering solutions developed by both Nikon and Crest Optics meet very high-end specifications required by most facilities and users.

- See better the structure of your sample with resolution down to 100 nm (XY) / 300 nm (Z)

- Do not be limited to thin samples with resolution improvement in depth (up to ~ 100 µm)

- 3x lattice patterns as standard to match sample condition (thickness, label density, dynamics)

- Reconstruction in one click, no complex settings, no expertise needed

- Same sample preparation as for confocal

- Same high NA objective line up as for confocal and works wonder with silicon & water immersion, for live-sample and/or depth and get accurate 3D data

- Super-Resolution modality added to your core confocal set-up which allows to:

* Acquire more data in less time with a complete optical path dedicated to large field of view of 25 mm

* Acquire quantitative data and optimize large image tilling with homogeneous illumination and exclusive design of excitation microlenses

* Record fastest dynamics at very high frame rates

* Cover simple to complex imaging workflows thanks Nikon Software platform (NIS-Elements).
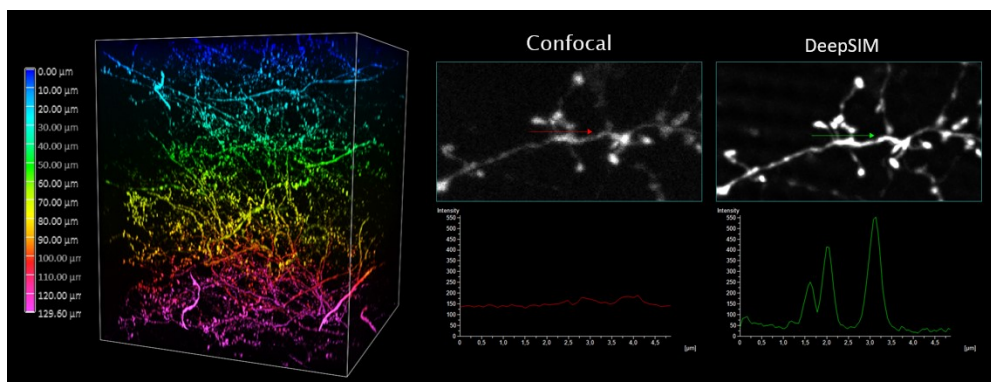
Mouse brain section with GFP expressing neurons imaged with DeepSIM on the left. Intensity profile of dendritic spines acquired at 100 µm depth in spinning disk confocal and lattice SIM mode.