CARL ZEISS MICROSCOPY

Lightfield 4D - Keeping pace with the pulse of life

LSM 990 and 910 – One imaging platform. Endless possibilities

by Dr. Annette Bergter

Life moves. Many neuronal and physiological processes occur at very high speeds, making it difficult to accurately capture their spatiotemporal dynamics. Although established technologies have become faster, the required acquisition time still increases with sample volume, so fast processes like neuronal activity or heartbeats require a trade-off between volumetric information and image frame rate. With Lightfield 4D, you no longer have to compromise, as you can capture up to 80 volumes per second without time delay in 3D. This makes it possible to follow neuronal activity in zebrafish brains, track tissue movement in developing Drosophila embryos, and keep track of moving structures in crawling C. elegans larvae.

The unique one-snap-one-volume acquisition of Lightfield 4D minimizes light exposure and allows you to efficiently acquire thousands of volumes over extended periods of time without harming your sample. Reach new heights of productivity with the ability to capture multi-color images at multiple positions within or between whole organisms, organoids or spheroids, in a single acquisition run.

In our workshop, we will provide an in-depth look at the technology and discuss opportunities for new microscopy experiments using Lightfield 4D. We will explore how you can derive scientific conclusions from this unique volumetric data by leveraging the 3D algorithms of ZEISS arivis pro.