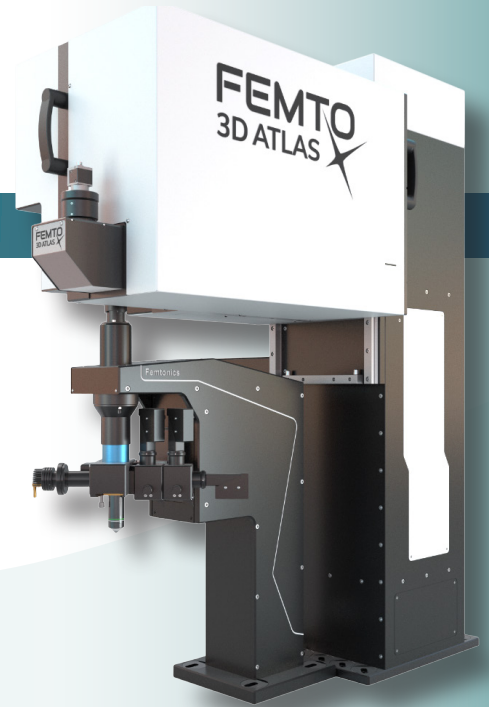


3D-RTMC: 3D REAL-TIME MOTION CORRECTION

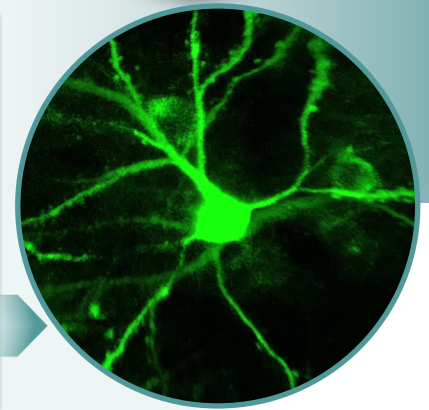
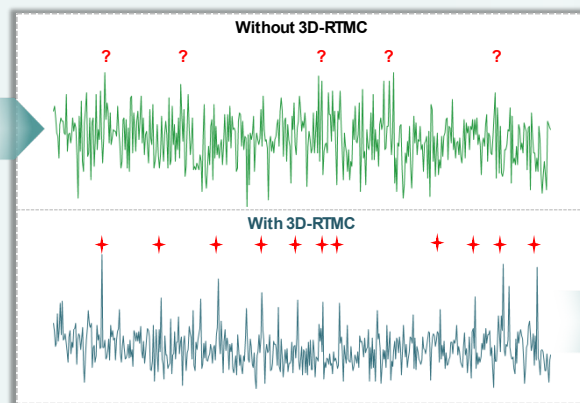
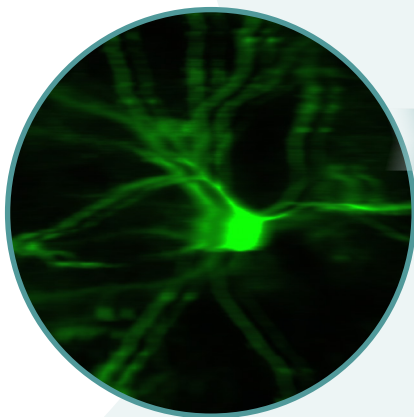
FEMTO 3D ATLAS



VARIOUS MOTION ARTIFACTS IN VIVO?

Femtonics 3D-RTMC

- ✓ In vivo measurements without motion artifacts, world first in the Z direction.
- ✓ Precise 3D network/dendritic imaging
- ✓ Higher SNR voltage imaging
- ✓ Organoid and structural imaging without artifacts
- ✓ Total FOV alignment during chronic imaging



► ACOUSTO-OPTIC BASED

By leveraging the capabilities of 3D random-access line scanning, our system enables seamless motion correction along each axis, **even in the Z direction**.

► EFFECTIVE AT IN-VIVO MEASUREMENTS

Motion artifacts caused by the movement of the animal, respiration, circulation can be **efficiently eliminated** (average residual motion < 10%), even on movements **up to 50 µm**.

► REAL-TIME

Compared to quasi-real-time solutions the **reaction time is one-tenth**.

► REACTION TIME

The cycle of repeated motion correction is **less than 500 µs**.

► SCANNING MODES

It is compatible with **all scanning modes** of the FEMTO3D Atlas system.

HOW EFFECTIVE IS THE REAL-TIME MOTION CORRECTION?

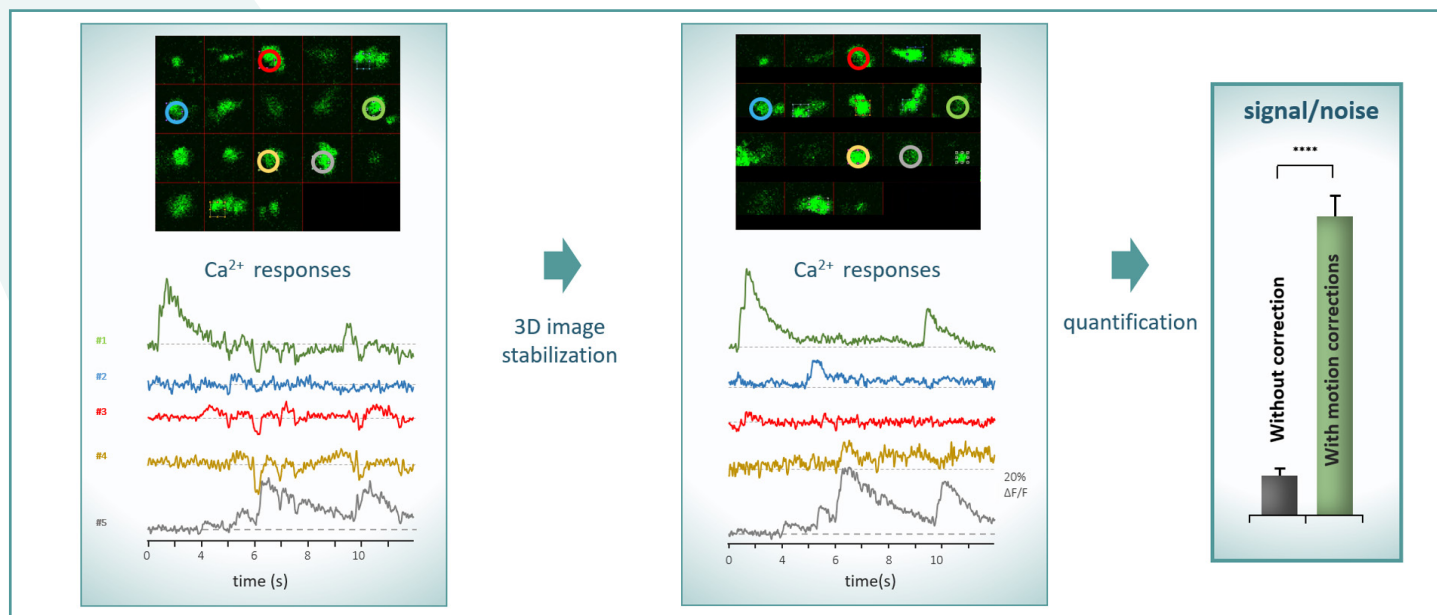


Figure 1: Signal-to-noise ratio (SNR) depends on the size of the region of interest (ROI) being measured. Smaller ROIs provide more accurate information due to the reduced background noise, but they are also more susceptible to motion. With the help of the Femtonics 3D-RTMC, the **SNR can become orders of magnitude higher**, even for smaller ROIs.

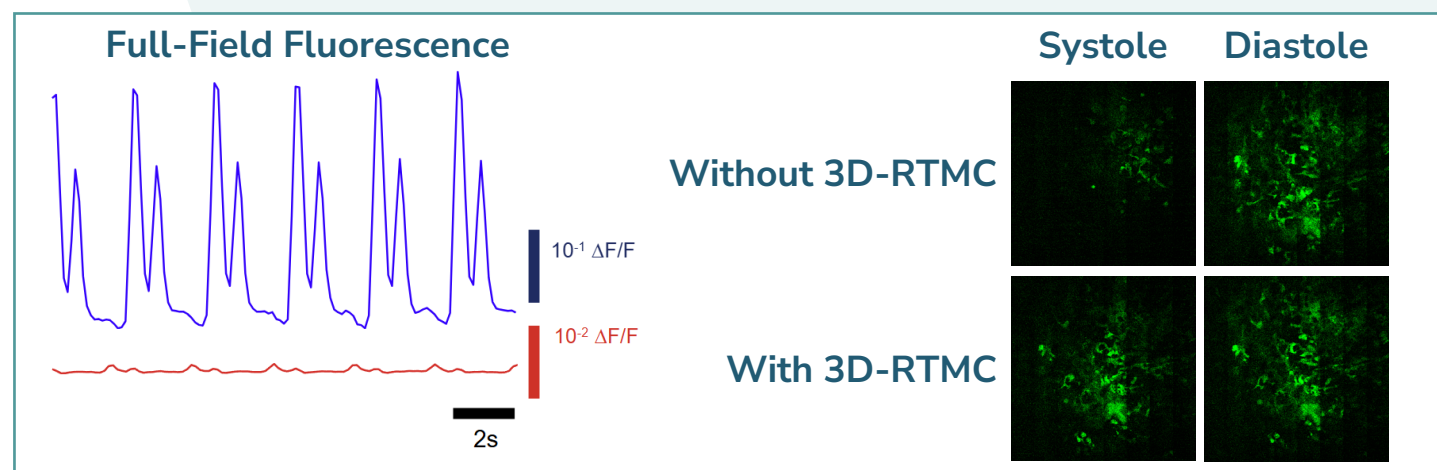


Figure 2: Left: Full-field fluorescence of the salamander heart. The marginal decrease is due to the motion correction not allowing the heart to leave the frame during systole. Right: 2p image of the systole and diastole states of the heart during imaging with and without 3D-RTMC.

FEMTONICS 3D-RTMC PROPERTIES

Maximum FOV for compensation	900x900x400 μm
Scanning mode compatibility	All scanning modes
Residual motion	Below 10%
Z-correction	Available
Reference point	Beads, Cells, or any arbitrary rigid object.



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Learn more:



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