

Seminar über Biomedizinische Photonik

Referent/in: Dr. Thomas Kirchner Division Computer Assisted Medical Interventions
German Cancer Research Center (DKFZ) Heidelberg, Germany

Titel: Interventional Photoacoustic Imaging of Blood Oxygenation

Multispectral photoacoustics is increasingly used to measure blood oxygenation - a functional biomarker with wide applications in both preclinical and clinical research. But various challenges remain in the translation of photoacoustic techniques into clinical and interventional settings. Besides usability for clinicians these challenges revolve around ensuring the best possible Signal-to-Noise, and handling the optical and acoustic inverse problems in the reconstruction of images from the acquired signal.

This talk will present our contributions in addressing some of these challenges:

(1) The design and implementation of an interventional handheld photoacoustic tomography system, (2) Methods for real-time photoacoustic image processing including quantification of tissue absorption and blood oxygenation, and finally (3) the application of multispectral photoacoustics to translational neurosurgical research.

Using these contributions we performed a functional photoacoustic imaging study of a stroke model, where we monitored blood oxygenation in large animal brains during prolonged surgery.

Zeit: Mittwoch, 16.10.2019, 10:15 Uhr

Ort: **Hörsaal A97**, Gebäude Exakte Wissenschaften, Sidlerstrasse 5, Bern, Schweiz