

Lecture: 'Optoacoustic imaging: a new window into biology combining the best of light and sound'

Data: venres, 17 setembro, 2021 -12:00 -
13:30

Lugar: CiTIUS Assembly Hall - Microsoft
Teams

Poñente(s): Xose Luis Dean Ben (University of Zurich -
UZH)

Idioma: Inglés

Streaming: [Segue este evento en directo](#)



Abstract: Optoacoustic (photoacoustic) imaging is being fostered by novel systems with optimized performance as well as by a growing interest of biologists and physicians in optoacoustic bio-markers that may address unmet needs. Optoacoustic clinical systems are available in a myriad of configurations generally classified in microscopy and tomography set-ups.

Overall, the hardware design must be adapted to the accessibility of the region of interest as well as to requirements on achievable depth, field of view or spatio-temporal resolution. Equally important are signal processing procedures, which are essential to achieve the desired image rendering performance. New algorithms for image reconstruction and multi-spectral unmixing have been optimized in parallel to newly-developed clinical set-ups.

Herein, we focus on recent progress on image formation algorithms and processing methods in optoacoustic tomography. Major challenges include the feasibility to provide real-time feed-back during the experiments as well as the ability to accurately quantify bio-markers with biological relevance and clinical impact. The performance of existing approaches is discussed in the context of ongoing progress in biological research and clinical translation.