

ON DEPTH RESOLUTION IN PHOTOACOUSTIC IMAGING

Speaker

Prof. Faouzi TRIKI

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Abstract

The talk is concerned with the stability issue in determining absorption and diffusion coefficients in quantitative photoacoustic imaging. Assuming that the optical wave is generated by point sources in a region where the optical coefficients are known, we derive Hölder stability estimates of the inversion. These results show that the reconstruction of the optical coefficients is stable in the region close to the optical illumination sources, and deteriorate exponentially far away. Our stability estimates confirm known experimental observations, and give a mathematical quantification of the depth resolution in photoacoustic imaging.

Biography

Faouzi Triki is a Maître de conférences at Grenoble Alpes University, France which he joined in 2004 after his two-years postdocs at Michigan State University. He did his PhD at École Polytechnique, France, after getting a Master's degree from Sorbonne University, France. He does research on mathematical modeling in optics, inverse problems focusing on multi-wave, and scattering-based imaging. He has been visiting professor in many international universities including University of Texas at Austin and Technical University of Denmark.



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