

Sectional Imaging in Photoacoustics

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In this talk we will discuss mathematical possibilities of estimating multiple parameters via photoacoustic imaging. We discuss applications to parallel estimation of the wave speed function and the absorption density, the later is the standard imaging parameter of photoacoustics. The basis of all the presented techniques is sectional imaging. In this talk, first, we derive backprojection formulas for sectional imaging and in turn for parallel estimation of the sound speed function and the absorption density.

The second part of the talk is concerned with quantitative imaging, to estimation of the optical parameters of the specimen given photoacoustic measurements. We discuss several approaches for analytical reconstructions.

The talk is based on joint work with Peter Elbau (Linz) and Andreas Kirsch (Karlsruhe).

