

Quantitative photoacoustic imaging of multiple coefficients with multiwavelength data

Kui Ren

Department of Mathematics
University of Texas at Austin
Austin, TX 78712

The objective of quantitative photoacoustic tomography (qPAT) is to reconstruct various physical parameters of tissues from interior data on absorbed radiation. We generalize the results of Bal and Uhlmann (Bal & Uhlmann, *Inverse Problems*, 2010) to the problem of reconstructing simultaneously the Grüneisen, absorption and diffusion coefficients using data collected from illuminations of different wavelengths. We prove uniqueness and stability of the inverse problem. Numerical simulations based on a non-iterative procedure will be presented. Part of the talk is based on joint work with Guillaume Bal.