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**Peter Kuchment\***, Mathematics Department, Texas A&M University, College Station, TX 77843, and **Mark Agranovsky**, **Yulia Georgieva-Hristova** and **Linh Nguyen**. *Mathematical problems of thermoacoustic tomography*.

The thermoacoustic (also called photoacoustic) tomography, TAT, is one of the newly developing hybrid medical imaging methods, in which electromagnetic and ultrasound signals are combined to achieve high contrast and resolution simultaneously. Mathematically speaking, one deals with an observability problem for the wave equation. In the case of a constant sound speed, an equivalent reformulation deals with inversion of an analog of Radon transform, where instead of planes one integrates over spheres with a restricted set of centers. The talk will contain some recent results on uniqueness and reconstruction in TAT. (Received February 02, 2008)