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Shari Moskow* (moskow@math.drexel.edu) and **Guillaume Bal**. *Local inversions in ultrasound modulated optical tomography.*

We consider the problem of the simultaneous recovery of both the absorption and diffusion coefficients with internal data in a form that is of power density type. We assume we have some known background coefficients, and examine the corresponding linearized problem. This linearized problem can be expressed as a fourth order system, and we examine its stability and injectivity properties. (Received September 24, 2012)