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Guillaume Bal* (gb2030@columbia.edu), 500 W. 120th St, New York, NY 10027. *Quantitative photoacoustics and other hybrid inverse problems.*

Hybrid medical imaging techniques aim to combine the good contrast properties of one modality with the good resolution properties of another one. Mathematically, several of these imaging techniques concern the reconstructions of constitutive parameters in partial differential equations from availability of values of functionals of the PDE solution inside the domain of interest (even though physical measurement are performed at the domain's boundary as a non-invasive technique). This talk will review several models, and in particular photo-acoustics and acousto-optics, and what can be said about them from the mathematical viewpoint. (Received September 21, 2010)