1056-35-1024 Peter Kuchment\* (kuchment@math.tamu.edu), Mathematics Department, Texas A&M University, College Station, TX 77843-3368, Leonid Kunyansky (leonk@math.arizona.edu), Mathematics Department, University of Arizona, Tucson, AZ, Moritz Allmaras (allmaras@math.tamu.edu), Mathematics Department, Texas A&M University, College Station, TX 77843-3368, and Wolfgang Bangerth (bangerth@math.tamu.edu), Mathematics Department, Texas A&M University, College Station, TX 77843-3368. Ultrasound modulated electrical impedance and optical tomography. Preliminary report.

Recent years have witnessed emergence of the so called hybrid modalities of medical imaging, where two different types of physical signals (e.g., ultrasound and electromagnetic waves) are used simultaneously and modulate each other in order to get a good resolution image. The mathematics of two types of such imaging methods will be discussed. (Received September 20, 2009)