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Altenbergerstrasse 69, A-4040 Linz, Austria. *Reconstruction Formulas for Photoacoustic Sectional
Imaging.*

In standard photoacoustic imaging, an object is analysed by illuminating it uniformly with a laser pulse which is absorbed by the material. The hereby induced pressure wave in the object is then observed with some sensors placed outside of the object. From these measurements, the absorption density of the object shall be reconstructed.

The idea behind photoacoustic sectional imaging is not to measure the whole object at once, but instead to focus the laser beam such that it illuminates only one slice of the object and then to reconstruct the absorption density in this illumination plane. In this talk, I would like to derive reconstruction formulas for this sort of measurements for different arrangements of detectors (considering point, line, and planar detectors) outside of the object. (Received September 21, 2011)