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Decomposition based recovery of absorbers in turbid media ISAAC GOODIN, BEN ROGERS, Q. SU, R. GROBE, Intense Laser Physics Theory Unit, Illinois State University — We suggest that the concept of the point-spread function traditionally used to predict the blurred image pattern of various light sources embedded inside turbid media can be generalized under certain conditions to predict also the presence and location of spatially localized absorbing inhomogeneities based on shadow point spread functions associated with each localized absorber in the medium. The combined image obtained from several absorbers can then be decomposed approximately into the arithmetic sums of these individual shadow point spread functions with suitable weights that can be obtained from multiple regression analysis. This technique permits the reconstruction of the location of absorbers.

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