1003-44-1302   **Leonid A Kunyansky*** (`leonk@math.arizona.edu`), Department of Mathematics, University of Arizona, 617 N. Santa Rita Ave., Tucson, AZ 85721. *Inversion of the 3-D exponential parallel-beam transform by reduction to a set of the 2-D Radon transforms with angle-dependent attenuation.*

We invert the 3-D parallel-beam exponential ray transform by reducing the problem to a series of the 2-D exponential Radon transforms with complex-valued angle-dependent attenuation. In the talk I will discuss the advantages and limitations of this algorithm, and will compare this method to the known inversion technique that relies on computation of composition of two inverse 2-D Radon transforms with real-valued angle-dependent attenuation. Numerical results will be presented to demostrate work of our method. (Received October 04, 2004)

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