1077-42-2041 **W. R. Madych*** (madych@math.uconn.edu). *Approximate reconstruction from circular mean data via classical summability.* Preliminary report.

The reconstruction of images from data modeled by circular or spherical mean Radon transforms plays an important role in thermoacoustic and photoacoustic tomography and gives rise to interesting and challenging mathematical questions. We describe two variants of a classical summability type approximate reconstruction method that produce good numerical results and show that in the limit one specific case leads to exact reconstruction. Among the consequences of this development are certain inversion type formulas. In our considerations the detectors need not be restricted to a circle. This work was done in collaboration with Marcus Ansorg, Frank Filbir, and Ruben Seyfried at the Institute of Biomathematics and Biometry, Helmholtz Center Munich, Germany. (Received September 21, 2011)