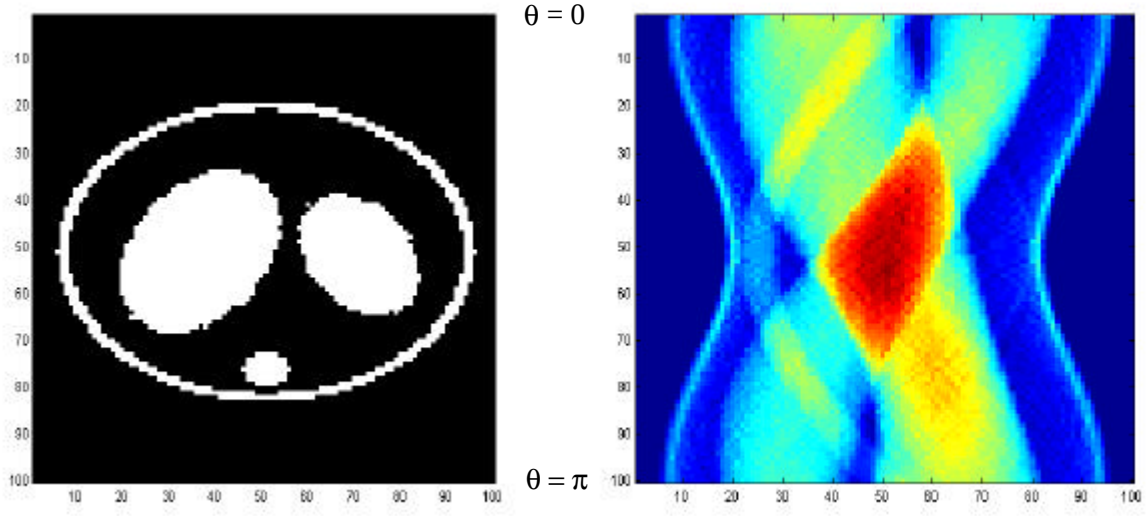
EE 5345
Instructor: C. Davila

Final Exam Problem 1

The object of this problem is to reconstruct the tissue phantom image from the radon transform of the phantom. The radon transform consists of an image whose rows are the $P_\theta(t)$ projection functions where θ goes from 0 to π. Turn in plots of the original phantom, the reconstructed phantom derived via simple back-projection, and the reconstructed phantom obtained via filtered back-projection. The images are 100 by 100 pixels and can be downloaded from the course web page. You may use any programming language you wish (Matlab, C, FORTRAN, etc.) Explain differences between the simple back-projected and the filtered back-projected reconstructions. This problem is worth 20% of the final exam grade. Please also sign the SMU Honor Code statement and submit it with your work.[1]



Tissue Phantom

Radon Transform of tissue phantom

[1] This work is in accordance with the Honor Code at Southern Methodist University.