Radon transformation
Signal and Image Processing 2014

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1. You are produce a program, which make sinograms of a given 2 dimensional image I of size $N \times N$ and the number of equal sized angular steps M in the interval $[0, 180)$ degrees. The sinogram must be $M \times N$. Apply your algorithm to a non-central point source and to the image `box.png` using $M = 180$. Discuss the result.

In the following you should consider the 2 sinograms produced above and the `sinogram.png`. The later was produced under the same conditions as above.

2. Implement backprojection, reconstruct the 3 images based on their sinograms. Discuss the result.

3. Repeat the above for filtered backprojection.

4. Using the sinogram function developed above and the two backprojection algorithms, discuss the effect of setting M to various values, taking an outset in the `box.png` image and possibly other illustrative examples.