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1 Implementation Details

Note that we have assumed that the angles are drawn uniformly at random from 0 to 180 degrees. With this, we don't have to take account the reverse projection vectors as they are just usual projection vectors for some angle in the above range.

For a fair comparison, angles of larger N cases contain the angles of smaller N case. In other words, each increment in value of N can be observed as adding more angles to smaller values cases

To get the reconstructed images with same orientation as the original image, first reflect the reconstructed image (if applicable) and then rotate the resulting image clockwise by the provided angle.

2 Observations

- In 2, reconstructions have good enough detail with more than 500 angles also evident by decreasing RMSE with increasing N (0.32 to 0.18)
- In 3 with 100 angles, minimum RMSE value of the rotated output image with the original image is in the same orientation as the original image

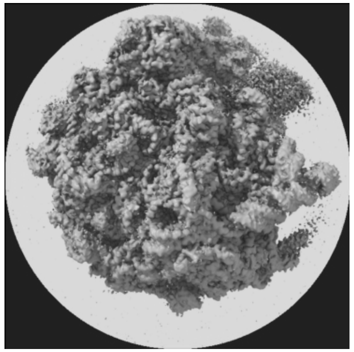
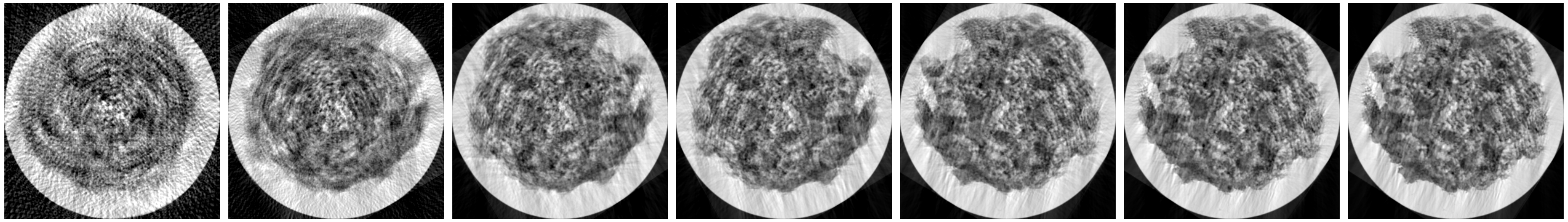
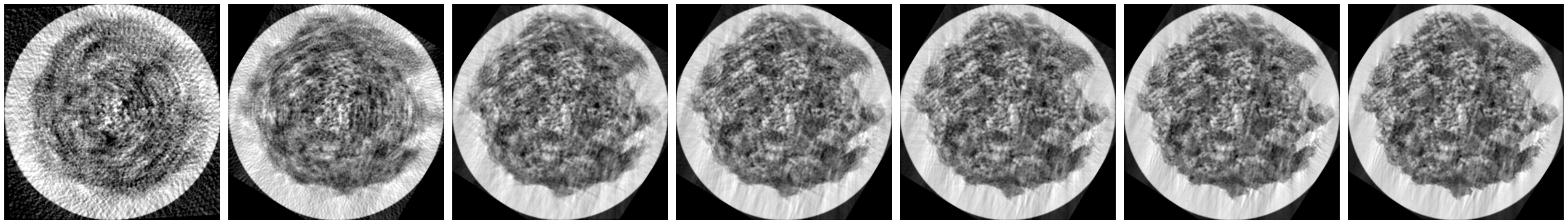


Figure 1: Original Image



(a) $(50, 0.31731)$ (b) $(100, 0.25435)$ (c) $(500, 0.2102)$ (d) $(1000, 0.19902)$ (e) $(2000, 0.19149)$ (f) $(5000, 0.1835)$ (g) $(10000, 0.17778)$

Figure 2: Reconstructed Images, with (N, RMSE)



(a) $(50, 87^\circ, \mathrm{no})$ (b) $(100, 31^\circ, \mathrm{no})$ (c) $(500, 33^\circ, \mathrm{no})$ (d) $(1000, 31^\circ, \mathrm{no})$ (e) $(2000, 31^\circ, \mathrm{yes})$ (f) $(5000, 33^\circ, \mathrm{yes})$ (g) $(10000, 33^\circ, \mathrm{yes})$

Figure 3: Reconstructed Images with approriate RMSE minimising rotation (clockwise) with(out) reflection $(N, \text{angle, reflected?})$