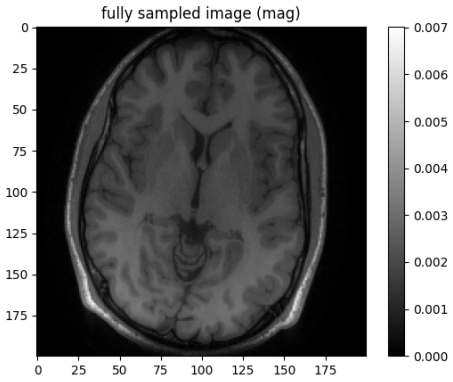
BME 599 HW 3

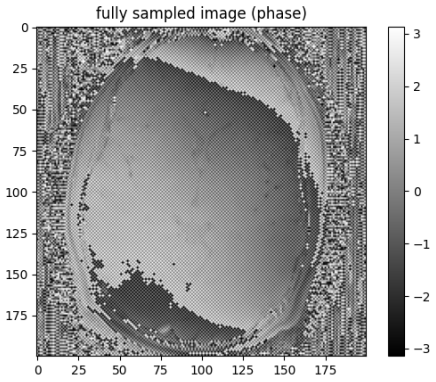
Jiayao Yang

Problem 1: Partial Fourier Imaging

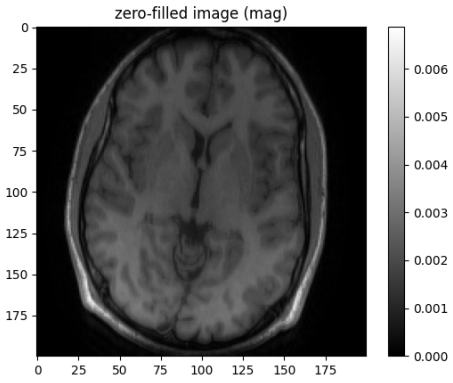
a. **zero-filled reconstruction.**

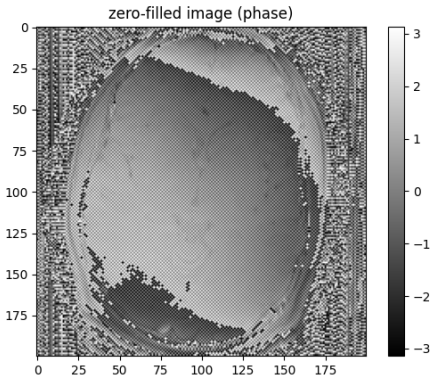
fully sampled image:



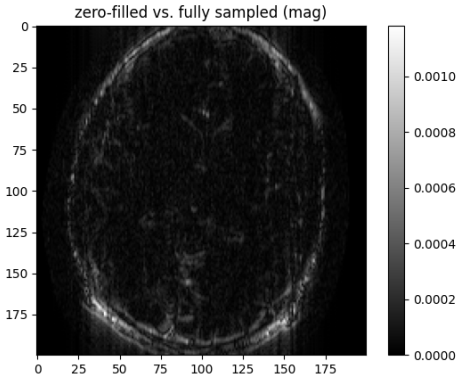


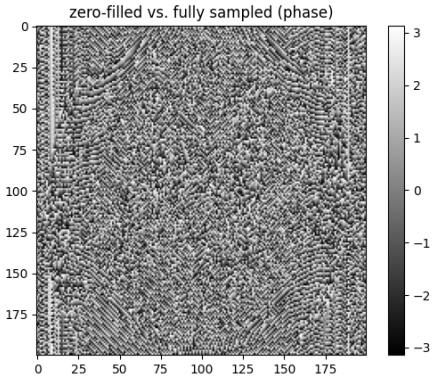
zero-filled reconstruction:





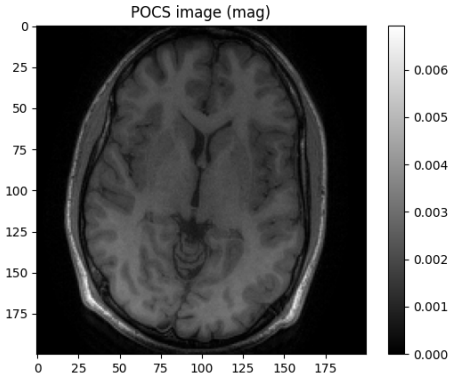
difference between the fully sampled image and zero-filled reconstruction:

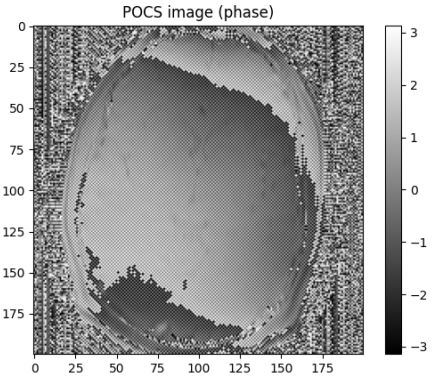




b. **Conjugate phase reconstruction.**

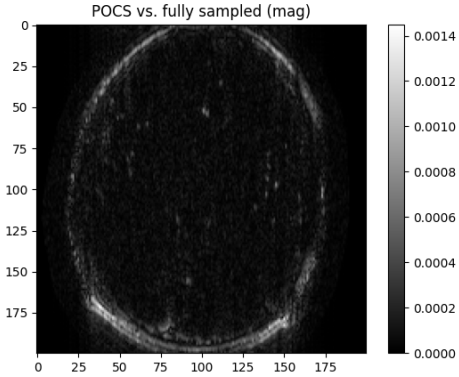
reconstructed image using POCS:

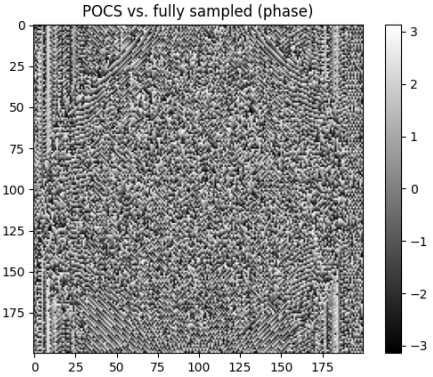




visually the resulted image is better than zero-filled

difference of fully sampled image and POCS reconstructed:

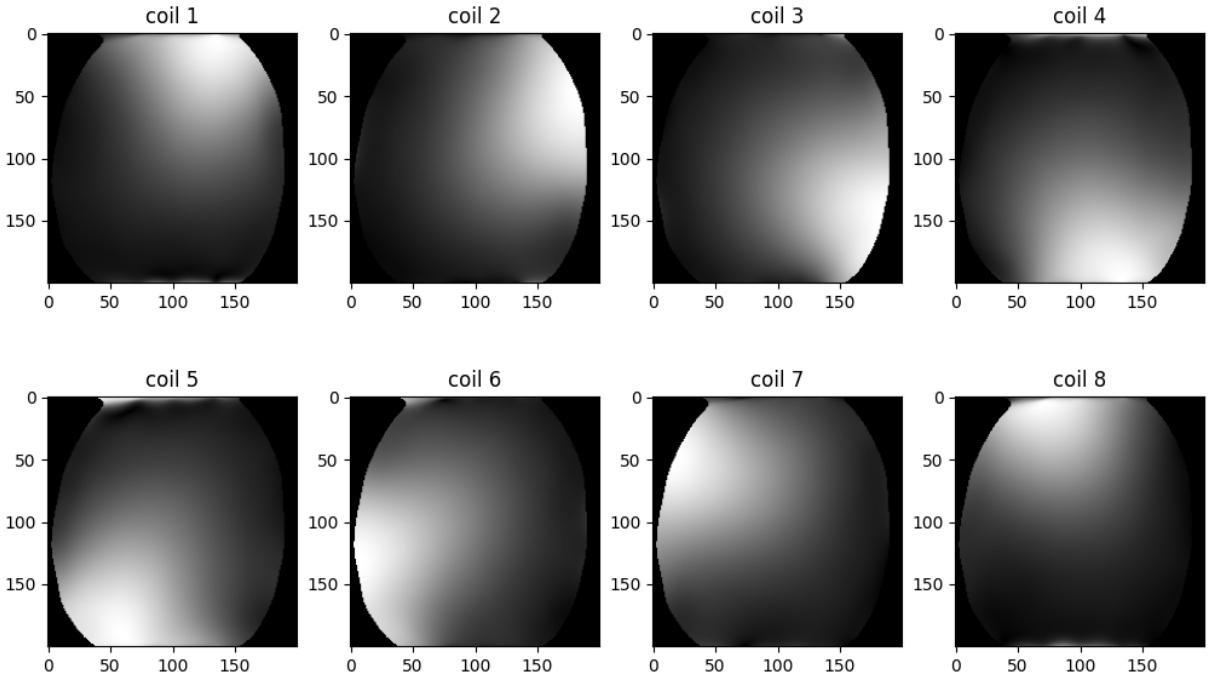


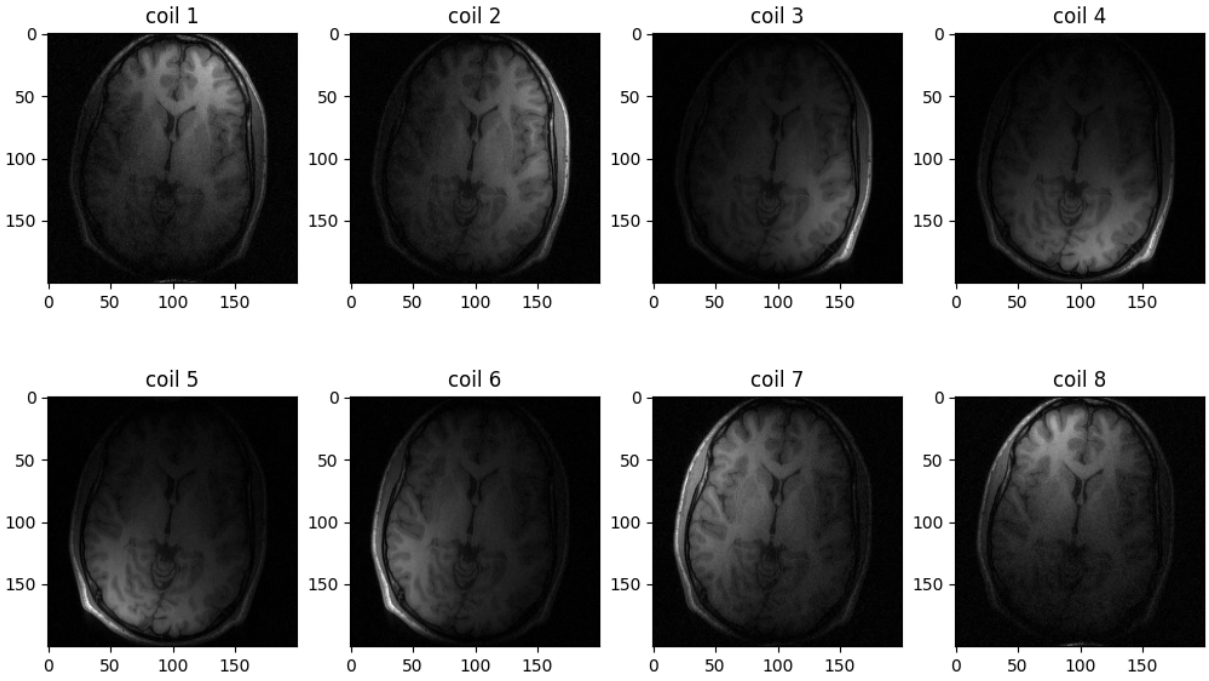


Problem 2: SENSE

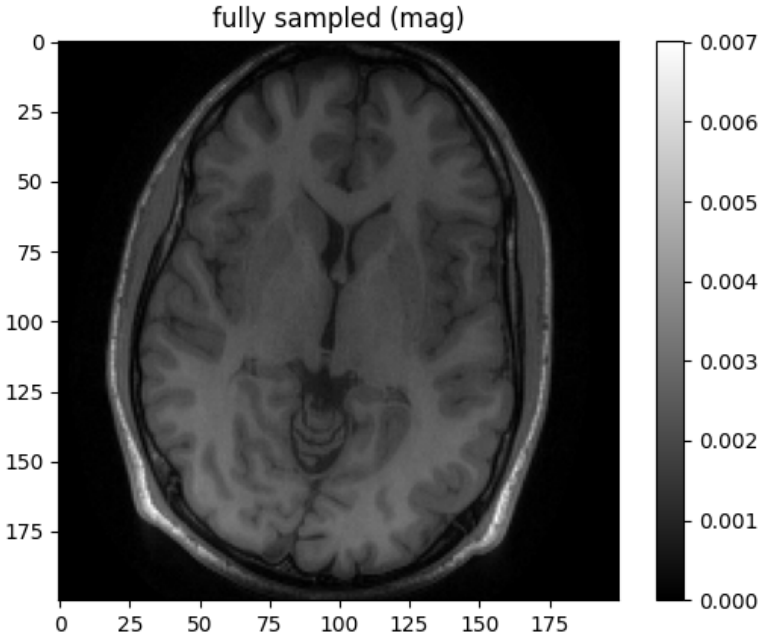
a. Fully sampled image.

coil maps:



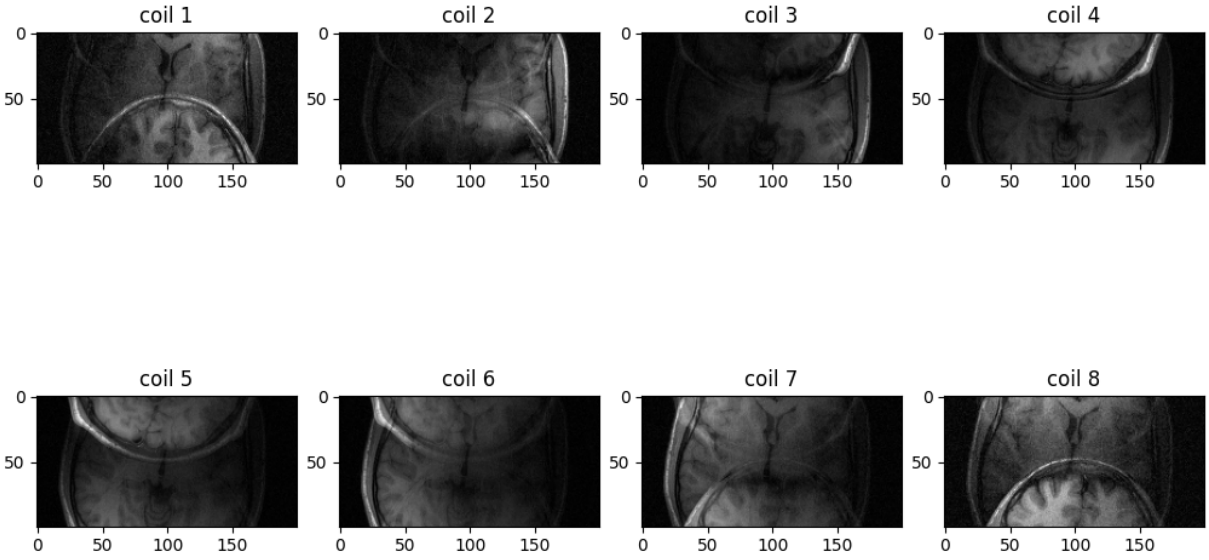


coil combined fully sampled image:



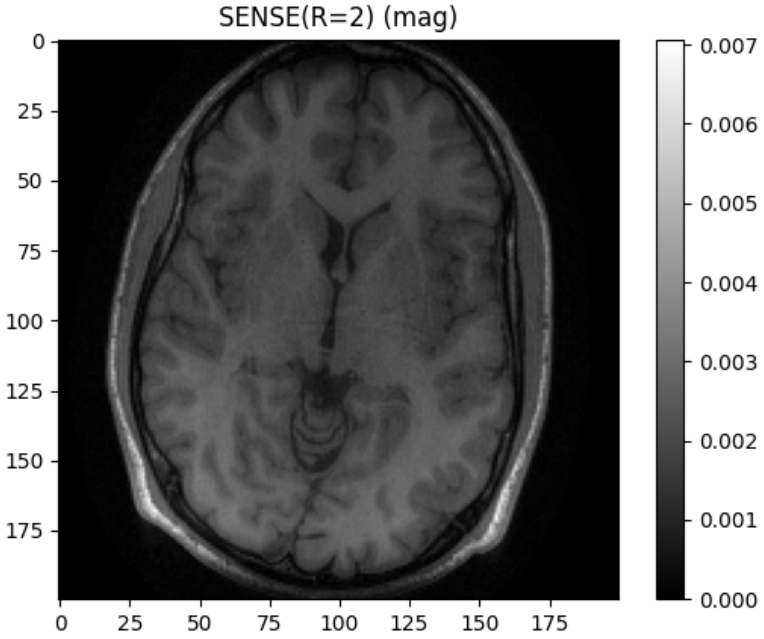
b. Aliased R=2 Image.

reconstruct of R=2 images:

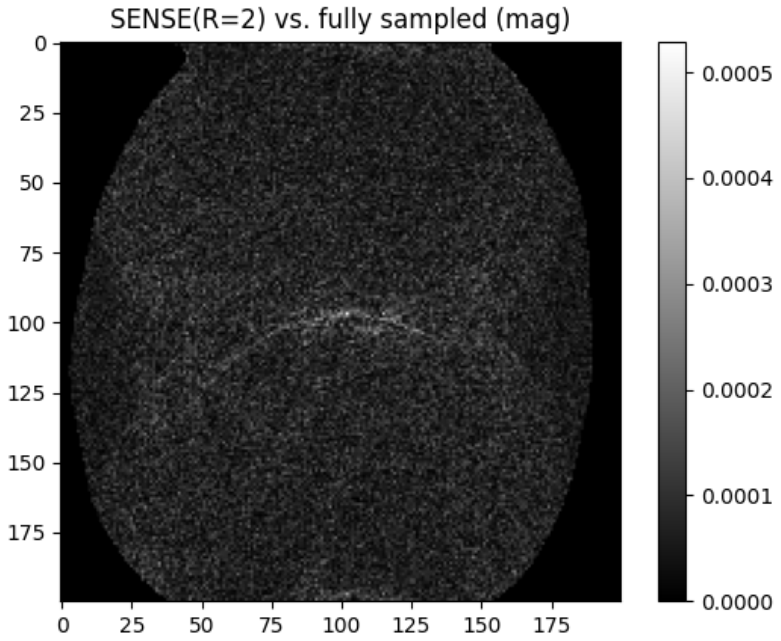


c. SENSE R=2 reconstruction.

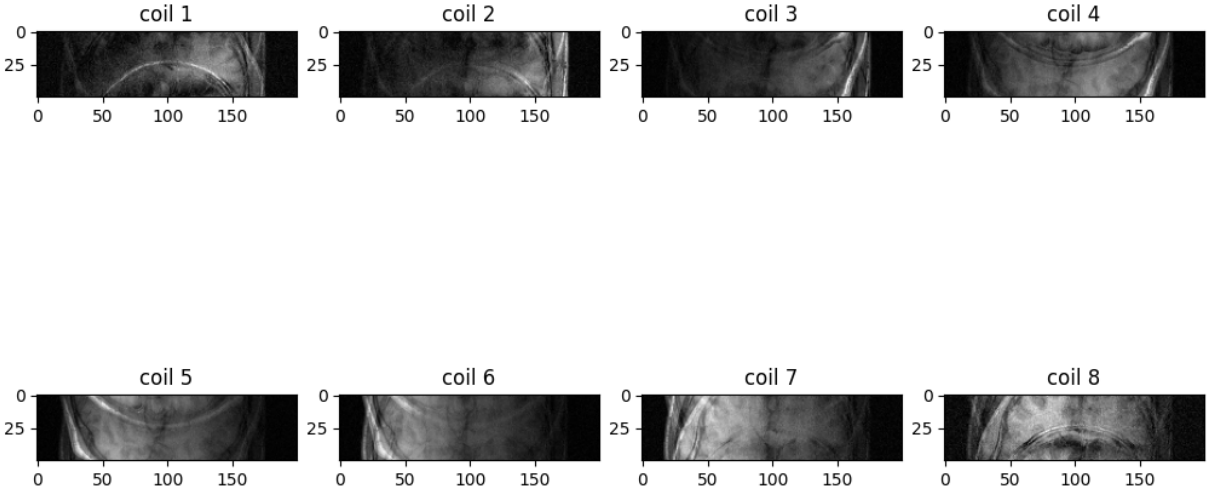
SENSE reconstructed image:



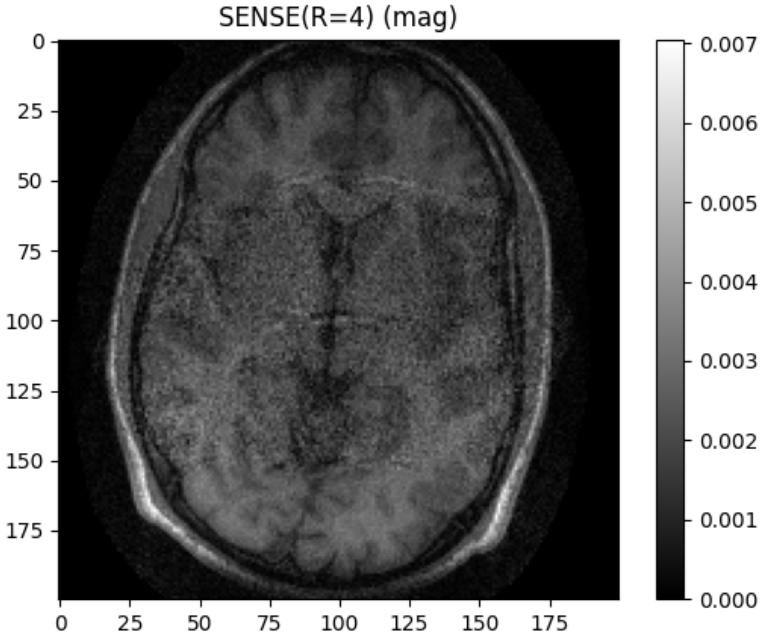
difference of fully sampled image and SENSE reconstructed:



d. SENSE R=4 reconstruction.



SENSE reconstructed image:



difference of fully sampled image and SENSE reconstructed: