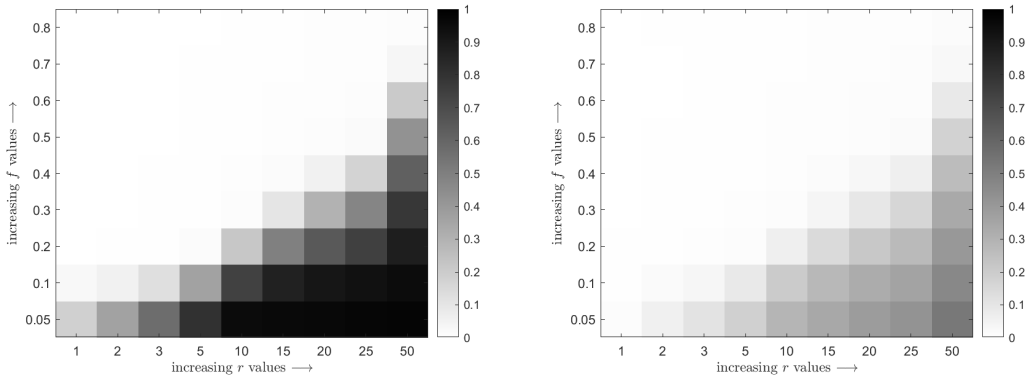
3

We generated results for two kinds of random matrices, one with entries from the standard normal distribution (`randn`) and the other from standard uniform distribution (`rand`). And then, their r rank approximation was taken. The plots are given below, the exact RMSE values are saved in the media directory.

$\Lambda = \{10, 50, 100, 500\}$ with validation fraction $= 0.9$.



(a) `randn` (b) `rand`

Figure 1: Both figures with the same color scale for better comparison

1 Observations

- RMSE values of random matrices generated using values from guassian distribution are significantly greator compared to the random matrices with uniform distribution. A possible reason could be as there is a clear dominant eigenvalue (magnitude) in the latter case while no such eigenvalue in the former case.
- As rank increases, RMSE increases implying worsening reconstruction.
- As number of measurements increases, RMSE decreases implying improving reconstruction.