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Inverse Problems - Worksheet 6 Winter term 2019/2020

1 Consolidation assignment

Reiterate on the material learned so far, in particular make sure you're familiar with the following concepts:

- Well-/Ill-posedness

- Regularized inversion

- SVD and Truncated SVD

- Tikhonov regularization

You can use the **Anki deck** made available on StudOn. If you feel that something is missing, feel free to generate suitable Anki cards and send them to `wacker@math.fau.de` so we can augment the deck for everyone.

2 Preparation assignment

1) **Peruse** the pdf titled "Tomographic X-Ray projection data" in StudOn.

2) **Prove** Theorem 2.1 in the reading assignment.

3) **Prove** Theorem 2.2 in the reading assignment.

4) **Think** about the well-/ill-posedness of the Radon transformation and how this relates to the inverse problem.

3 Notes / Insights from class