Honors Defense

Generalized Cross Validation for Ill-Posed Inverse Problems

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Abstract: In this thesis, we will introduce two popular regularization tools for ill- posed linear inverse problem, truncated singular value decomposition and Tikhonov regularization. After that we will implement them with the gener- alized cross validation (GCV) method to choose regularization parameters. We consider in particular problems that have noise in the measured data, noise in the matrix, and noise in both the measured data and the matrix. Numerical experiments are used to test the GCV method for each of these noise models.

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Mathematics and Science Center: W306

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