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A Learning Approach for Computing Regularization Parameters for Tikhonov Regularization

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Computing regularization parameters for Tikhonov regularization can be an expensive and difficult task, especially if multiple parameters or many solutions need to be computed in real time. In this work, we assume training data is available and describe an efficient learning approach for computing regularization parameters that can be used for a large set of problems. Several tests are performed for 1D and 2D examples showing the effectiveness of this approach.