1 A Truncated Singular Component Method for Ill-Posed Problems

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The truncated singular value decomposition (TSVD) method for solving ill-posed problems regularizes the solution by neglecting contributions in the directions defined by singular vectors corresponding to small singular values. In this work we propose an alternate method, neglecting contributions in directions where the measurement value is below the noise level. We call this the truncated singular component method (TSCM). We present results of this method on test problems, comparing it with the TSVD method and with Tikhonov regularization.