

Noise propagation on Golub-Kahan bidiagonalization process

April 10, 2013

1 Group details

We have 3 group members:

- Juan Durazo;
- Bredan Horan;
- Arthur Mitrano.

2 Background reading

After a brief discussion with group members and the class instructor, the following papers will be study:

1. Hnetynkova, I. and Plesinger, M.. *The regularizing effect of the Golub-Kahan iterative bidiagonalization and revealing the noise level in the data.* BIT Numer Math (2009) 49: 669696.
2. Rust, B. W. and O'Leary, D. P.. *Residual periodograms for choosing regularization parameters for ill-posed problems.* Inverse Problems 24 (2008) 034005 (30pp).
3. Rust, B. W. *Parameter Selection for Constrained Solutions to Ill-Posed Problems.* Computing Science and Statistics (2000), 32, 333-347.
4. Hansen, P. C. and Jensen, T. K.. *Noise propagation in regularizing iterations for image deblurring.* Electronic Transactions on Numerical Analysis. Volume 31, pp. 204-220, 2008.
5. Jensen, T. K. and Hansen, P. C.. *Iterative regularization with minimum-residual methods.* BIT Numerical Mathematics (2007) 47: 103120.
6. Hansen, P. C., Kilmer, M. E. and Kjeldsen, R. H.. *Exploiting residual information in the parameter choice for discrete ill-posed problems.* BIT Numerical Mathematics (2006) 46: 4159.