l1 magic

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This package contains code for solving seven optimization problems. A detailed explanation is given in the file l1magic.pdf.

The main directory contains MATLAB m-files which contain simple examples for each of the recovery problems. They illustrate how the code should be used (it is fairly straightforward). The prefixes on the example files are as follows:

"l1eq" = L1 minimization with equality constraints,

"l1qc" = L1 minimization with quadratic (L2 norm) constraints,

"l1decode" = L1 norm approximation (for channel decoding),

"11dantzig" = L1 minimization with minimal residual correlation (the Dantzig selector).

"tveq" = TV minimization with equality constraints,

"tvqc" = TV minimization with quadratic constrains,

"tvdantzig" = TV minimization with minimal residual correlation.

The 'Optimization' directory contains the m-files for the actual interior-point optimization algorithms.

The 'Measurements' directory contains implementations of some relevant large-scale measurement matrices that are used in the examples.

The 'Data' directory contains test images for the examples.

The code will only run on MATLAB 7.0 and higher. The incompatibility with previous versions comes from the way function handles are used.

If you have questions or comments, please contact

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