Improved Quantitative Susceptibility Mapping with Weighted Total Least Squares

**Matlab Codes:**

#Matlab Implementation of Weighted Total Least Squares Algorithm (proposed):

**Phantom simulations**: Generate\_Fig1.m

Generate\_Fig2.m

Generate\_Fig3.m (requires various\_snr.m)

Generate\_Fig4.m

Generate\_Fig5.m

Generate\_Fig6.m

requires ---- data can be downloaded from: [http://weill.cornell.edu/mri/pages/qsm.html](http://www.google.com/url?q=http%3A%2F%2Fweill.cornell.edu%2Fmri%2Fpages%2Fqsm.html&sa=D&sntz=1&usg=AFQjCNFFYy2v8EhTW0vhvz0UDfV-Kue4Sw)

qsm\_lttls.m

ttls\_my.m

sparse\_tv\_qsm.m

addNoise.m

compute\_rmse.m

compute\_hfen.m

compute\_ssim.m

viewOrthoSlices2D\_phantom\_view.m

***in vivo* simulations**: Generate\_Fig7.m

requires ---- data can be downloaded from: [http://www.neuroimaging.at/qsm2016/pages/qsm-challenge.php](http://www.google.com/url?q=http%3A%2F%2Fwww.neuroimaging.at%2Fqsm2016%2Fpages%2Fqsm-challenge.php&sa=D&sntz=1&usg=AFQjCNGNtky9YBP6NWzJdENVRxjO4kAtLA)

viewOrthoSlices2D\_myrealnew.m

The data obtained after adding noise to the numerical phantom cases to test TLS methods were shared in the following link:

<https://drive.google.com/open?id=0B2HqXYSU1ttaOXhfcENYQ2ROU2c>

#Matlab Implementation of LSQR, L2, and L1 Algorithm:

Available in:

J.Chung, L.Ruthotto, "Computational Methods for Image Reconstruction", (http://dx.doi.org/10.1002/nbm.3545), NMR Biomedicine Special Issue: QSM, 2016.

This Matlab code is used as part of the work presented in:

Sreedevi Gutta, Venkata Suryanarayana Kadimesetty, and Phaneendra K. Yalavarthy, “Improved Quantitative Susceptibility Mapping with Weighted Total Least Squares," Magnetic Resonance in Medicine (Submitted).

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