Model-Resolution based Basis Pursuit Deconvolution Improves Diffuse Optical Tomographic Imaging

**Matlab Codes\* :** (requires [NIRFAST](http://www.google.com/url?q=http%3A%2F%2Fwww.dartmouth.edu%2F%257Enir%2Fnirfast%2F&sa=D&sntz=1&usg=AFQjCNGy0Qj1Ase3wF2EPCnMRDNOteJ80A))

#Matlab Implementation of SVD based Basis Pursuit Deconvolution Algorithm (proposed): reconstruct\_cw\_bpd\_fast\_svd.m\*\*\* (requires SVD based salsa algorithm: bpd\_salsa\_sparsemtx\_fast\_svd.m\*\*)

#Matlab Implementation of standard Basis Pursuit Deconvolution Algorithm: reconstruct\_cw\_bdp.m\*\*\* (requires salsa algorithm: bpd\_salsa\_sparsemtx.m\*\*)

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

Jaya Prakash, Hamid Dehghani, Brian W. Pogue and Phaneendra K. Yalavarthy, “Model-Resolution based Basis Pursuit Deconvolution Improves Diffuse Optical Tomographic Imaging," IEEE Transactions on Medical Imaging, 33(4), 891-901 (2014).

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\* The code does not come with any guarantees and can be freely used for any purpose.

\*\* Adapted from Sparsity in Signal Processing Toolbox ([Version: 1](http://www.google.com/url?q=http%3A%2F%2Feeweb.poly.edu%2Fiselesni%2Fteaching%2Flecture_notes%2Fsparsity_intro%2Findex.html&sa=D&sntz=1&usg=AFQjCNGs1d5E6JELm_k9Ht_ZNy1t8TiZ1w))

\*\*\* GCV method was adapted from Regularization Tools ([Version: 4](http://www.google.com/url?q=http%3A%2F%2Fwww2.imm.dtu.dk%2F%257Epch%2FRegutools%2F&sa=D&sntz=1&usg=AFQjCNHIl4GNUv_7xBKYfGdYoZOWRDFPHQ))