

LMTR

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This package contains limited memory trust-region and line-search algorithms implemented in MATLAB. The algorithms are described in "On Efficiently Combining Limited Memory and Trust-Region Techniques", technical report LiTH-MAT-R-2013/13-SE, Department of Mathematics, Linköping University, 2013.

<http://liu.diva-portal.org/smash/record.jsf?pid=diva2%3A667359>

ALGORITHMS

For more information on each algorithm, type "help ALGORITHMNAME.m"

- *LMTR_EIG_inf_2.m* - limited memory trust-region algorithm EIG(∞ , 2) based on the eigenvalue-based norm $\|x\|_{\infty, 2}$, with the exact solution to the TR subproblem in closed form;
- *LMTR_EIG_MS_2_2.m* - limited memory trust-region algorithm EIG-MS(2,2) based on the eigenvalue-based norm $\|x\|_{2,2}$, with the Moré-Sorenson approach for solving a low-dimensional TR subproblem;
- *LMTR_EIG_MS.m* - limited memory trust-region algorithm EIG-MS, applies the Moré-Sorenson approach for solving the TR subproblem defined in the Euclidean norm using the eigenvalue decomposition of the Hessian approximation;
- *LMTR_BWX_MS.m* - limited memory trust-region algorithm BWX-MS, applies the Moré-Sorenson approach for solving the TR subproblem defined in the Euclidean norm. It is a modified version of the algorithm by Burke et al;
- *LMTR_DDOGL.m* - limited memory trust-region algorithm DDOGL, applies the double dogleg approach for solving the TR subproblem defined in the Euclidean norm.
- *LBFGS_MT.m* - limited memory line-search algorithm based on the Moré-Thuente line search;
- *LBFGS_MTBT.m* - limited memory line-search algorithm based on the Moré-Thuente line search, takes initial step using backtrack;
- *LBFGS_TR.m* - limited memory line-search algorithm, takes a trial step along the quasi-Newton direction inside the trust region.