Comparison of ASCALCG and SCALCG conjugate gradient algorithms for solving large-scale unconstrained optimization problems

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Figure 1 presents the Dolan-Moré CPU time performance profiles of ASCALCG and SCALCG conjugate gradient algorithms for large-scale unconstrained optimization. The ASCALCG – the accelerated BFGS preconditioned conjugate gradient algorithm is an acceleration of the SCALCG algorithm.

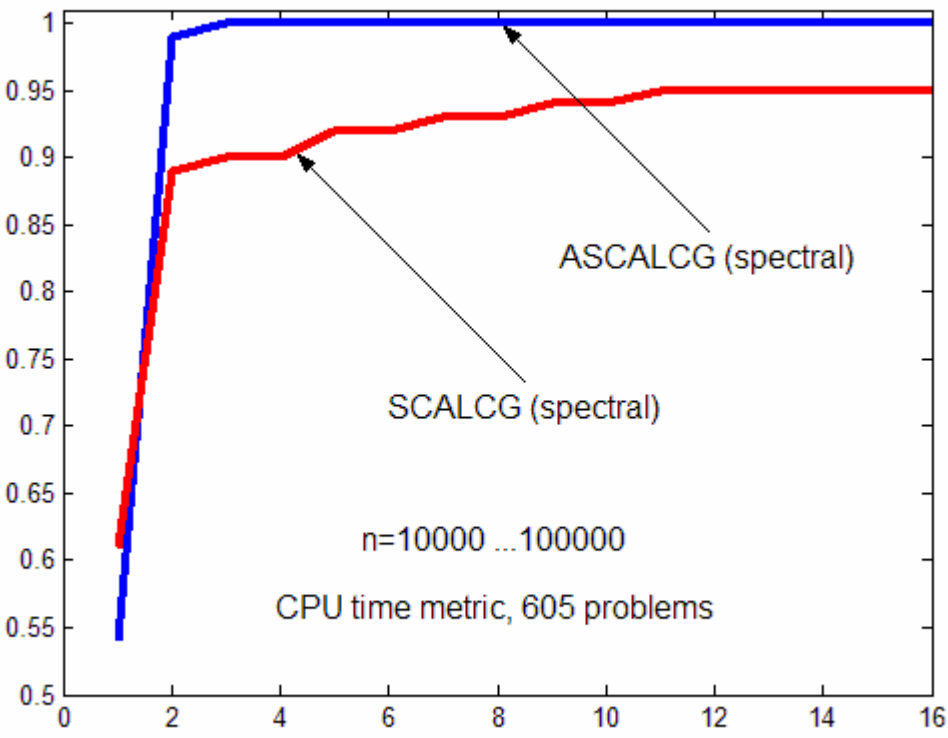

Fig. 1. ASCALCG (spectral) versus SCALCG (spectral).
Number of variables: $n \in [10000, 100000]$.

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nexptot= 750    nexp= 605
Total Number of iterations for ASCALCG =   215828
Total Number of iterations for SCALCG  =   321440

Total Number of function evaluations for ASCALCG =   398163
Total Number of function evaluations for SCALCG  =  2006594

Total Time (centeseconds)  for ASCALCG =  1506673
Total Time (centeseconds)  for SCALCG  =  2166236
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