Comparison of AHYBRIDM, HYBRIDM and HYBRID conjugate gradient algorithms

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Figure 1 presents the Dolan-Moré CPU time performance profiles of AHYBRIDM and HYBRID conjugate gradient algorithms for unconstrained optimization. On the other hand, Figure 2 presents the Dolan-Moré CPU time performance profiles of AHYBRIDM and HYBRIDM conjugate gradient algorithms for unconstrained optimization.
The HYBRID conjugate gradient algorithm is a convex combination of HS and DY from Newton direction with secant condition. The HYBRIDM is a convex combination of HS and DY from Newton direction with modified secant condition. Finally, AHYBRIDM is an acceleration of HYBRIDM.

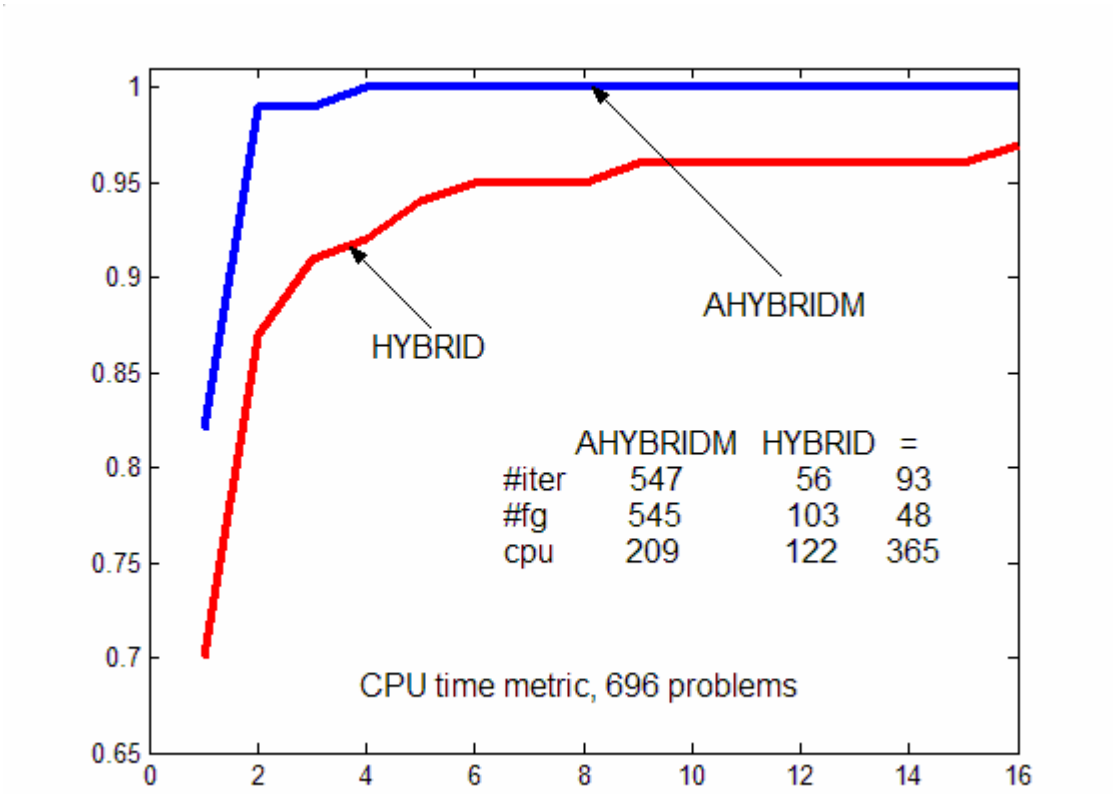

Fig. 1. Performance profile of AHYBRIDM versus HYBRID.

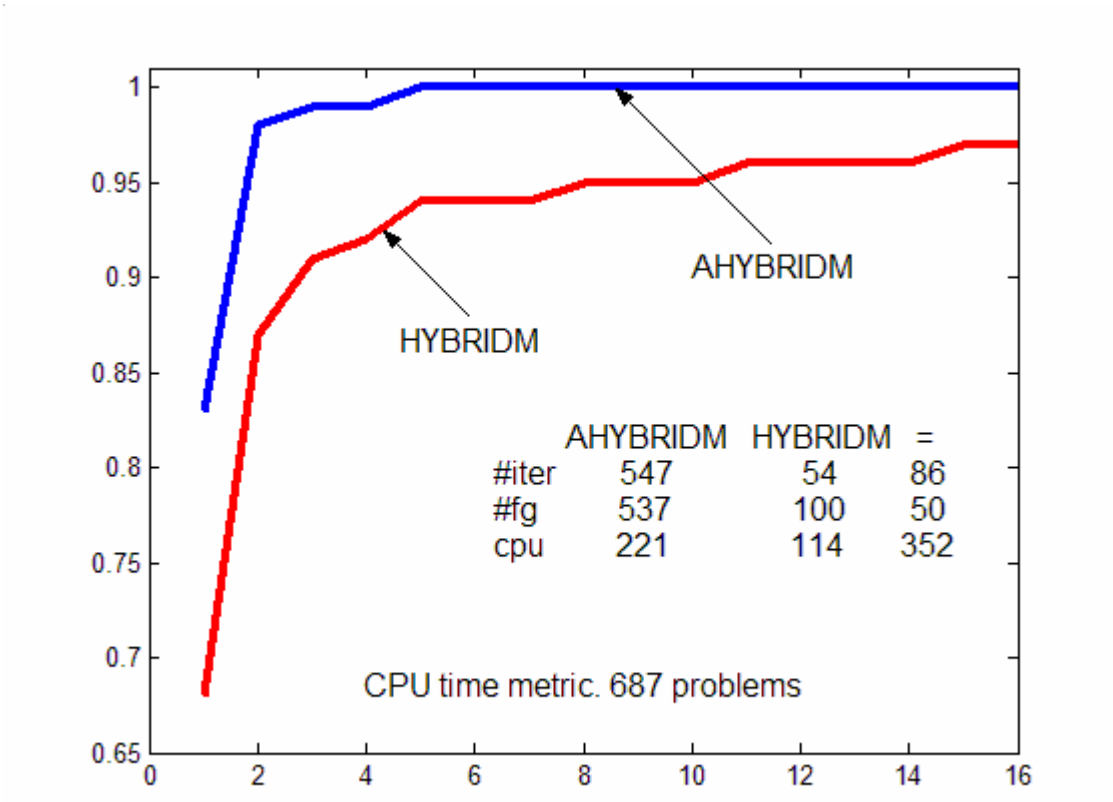

Fig. 2. Performance profile of AHYBRIDM versus HYBRIDM.

In Figure 3 we present the Dolan-Moré CPU time performance profiles of HYBRIDM and HYBRID.

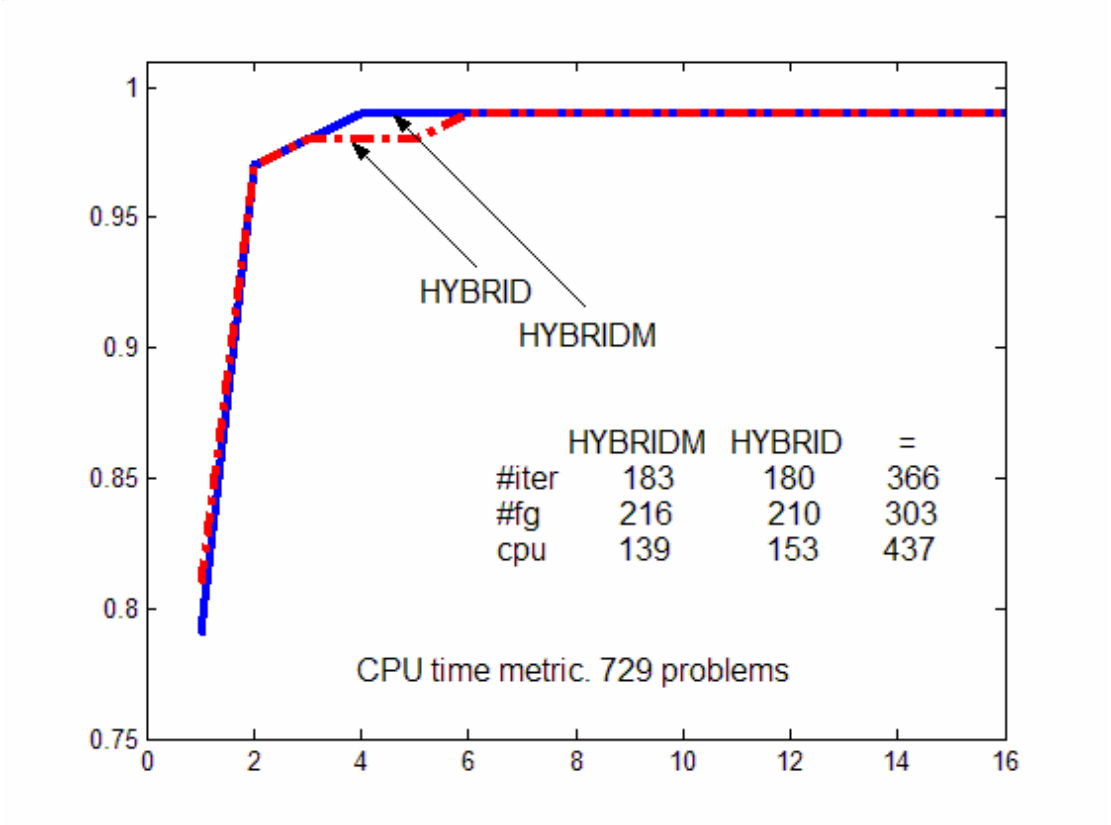

Fig. 3. Performance profile of HYBRIDM versus HYBRID.

Figure 4 presents the Dolan-Moré CPU time performance profiles of AHYBRIDM and CG_DESCENT by Hager and Zhang with Wolfe line search.

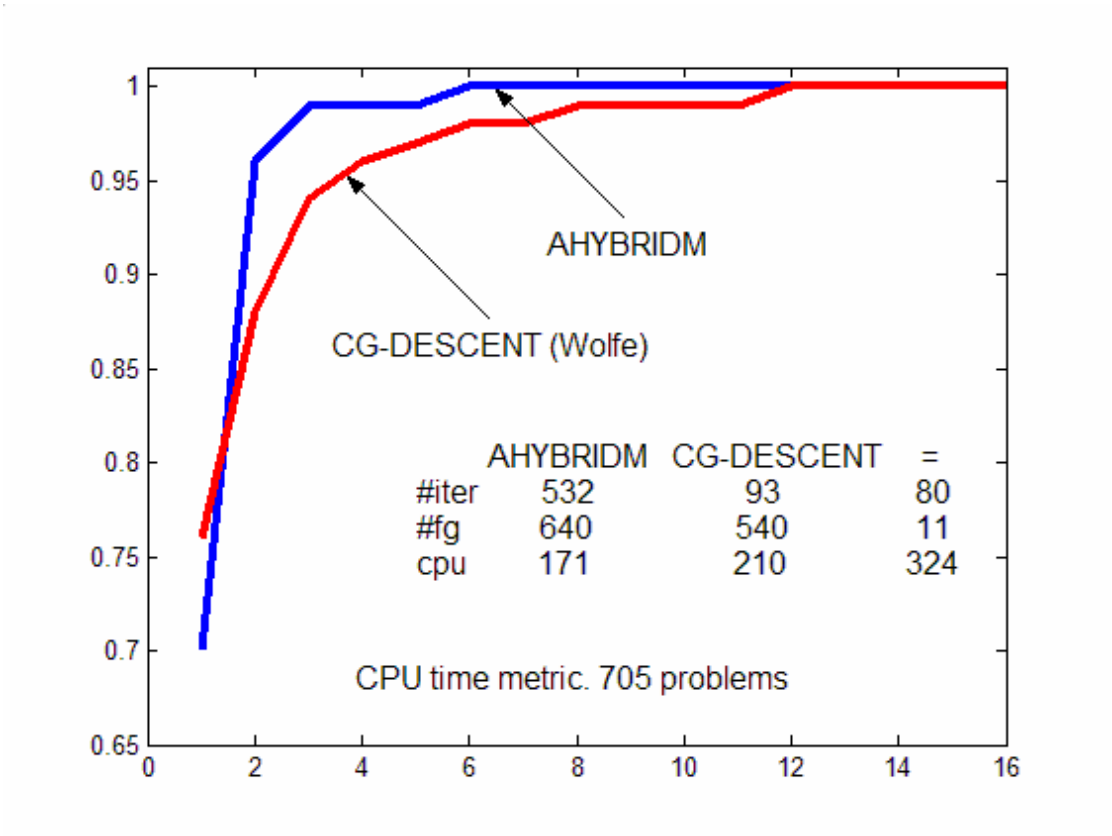

Fig. 4. Performance profile of AHYBRIDM versus CG_DESCENT (Wolfe).

References

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