

Numerical Experiments with CCOMB algorithm

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Angle restart

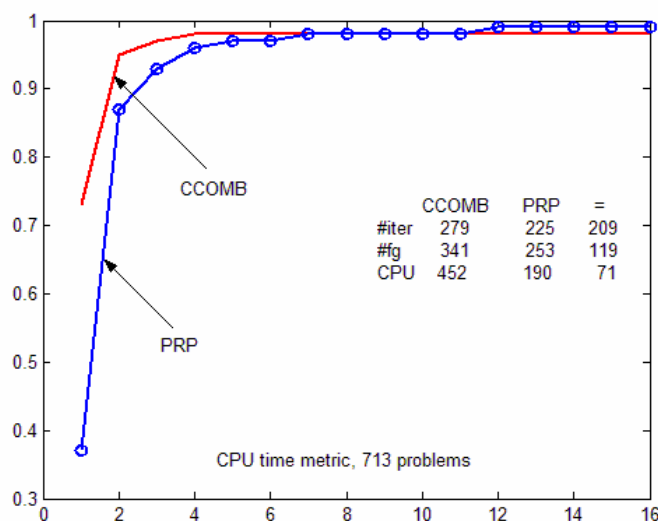


Fig. 1. Performance profiles CCOMB versus PRP. CCOMB with angle restart.

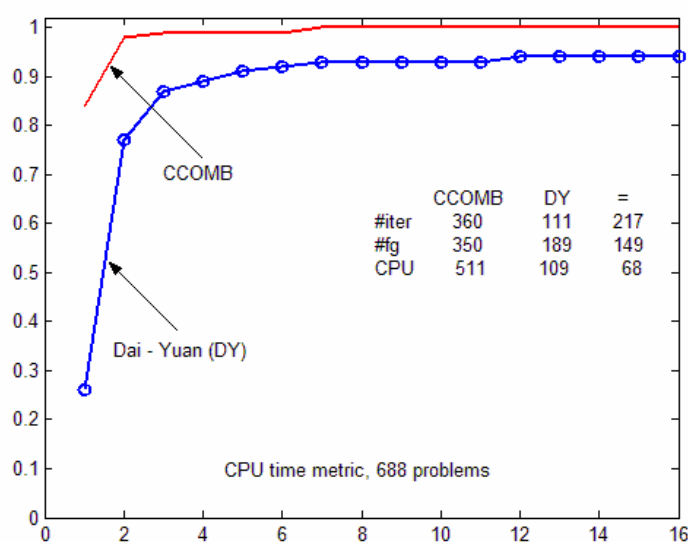


Fig.2. Performance profiles CCOMB versus DY. CCOMB with angle restart.

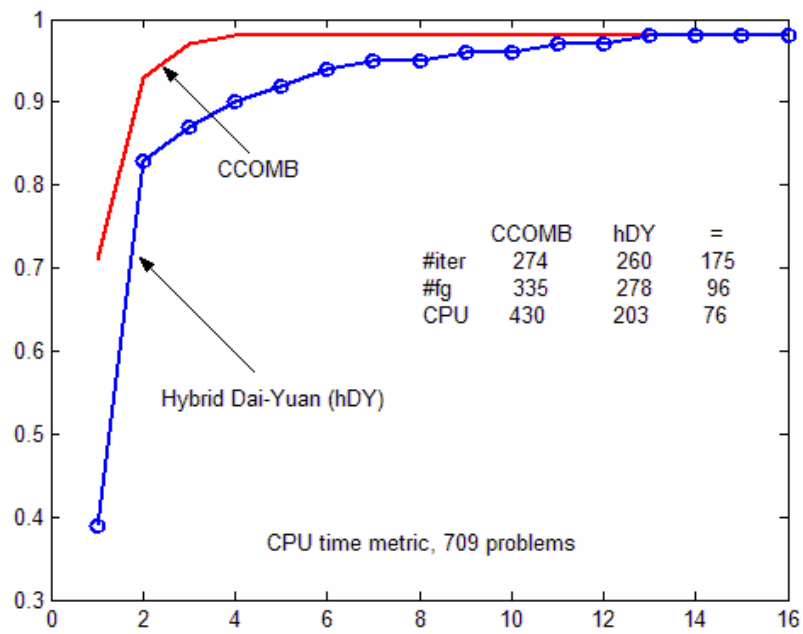


Fig.3. Performance profiles CCOMB versus hDY. CCOMB with angle restart.

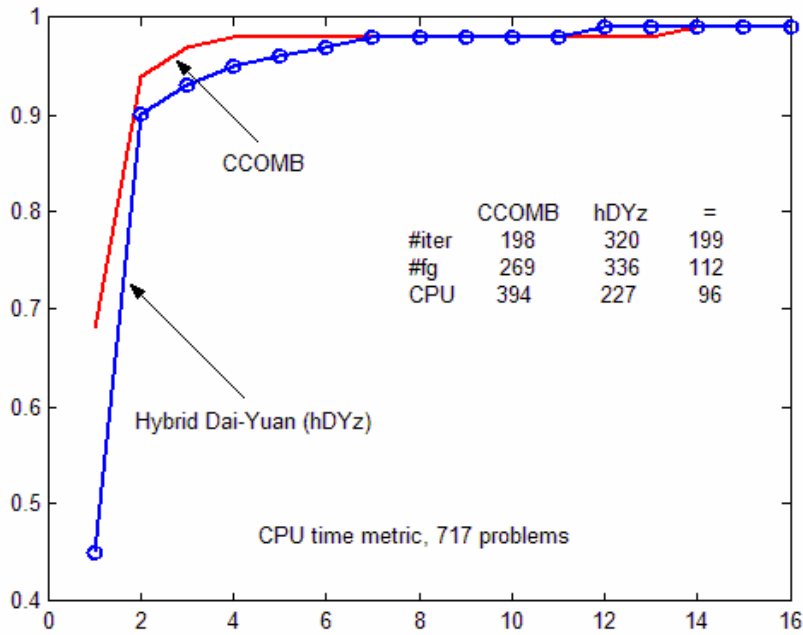


Fig. 4. Performance profiles CCOMB versus hDYz. CCOMB with angle restart.

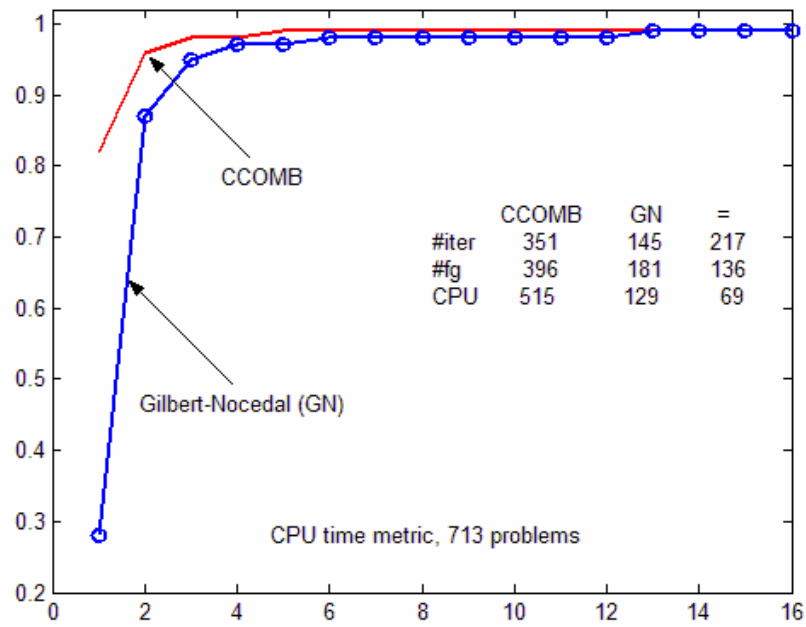


Fig. 5. Performance profiles CCOMB versus GN. CCOMB with angle restart.

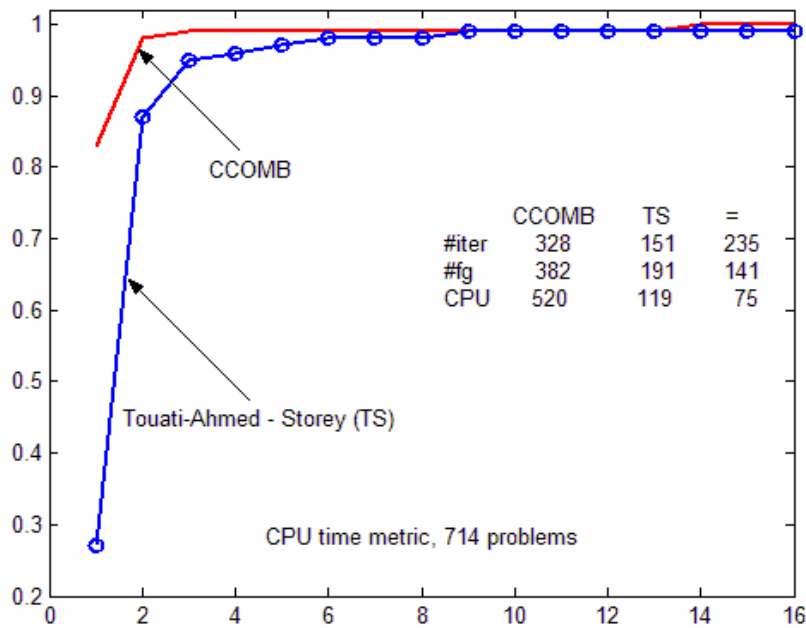


Fig. 6. Performance profiles CCOMB versus TS. CCOMB with angle restart.

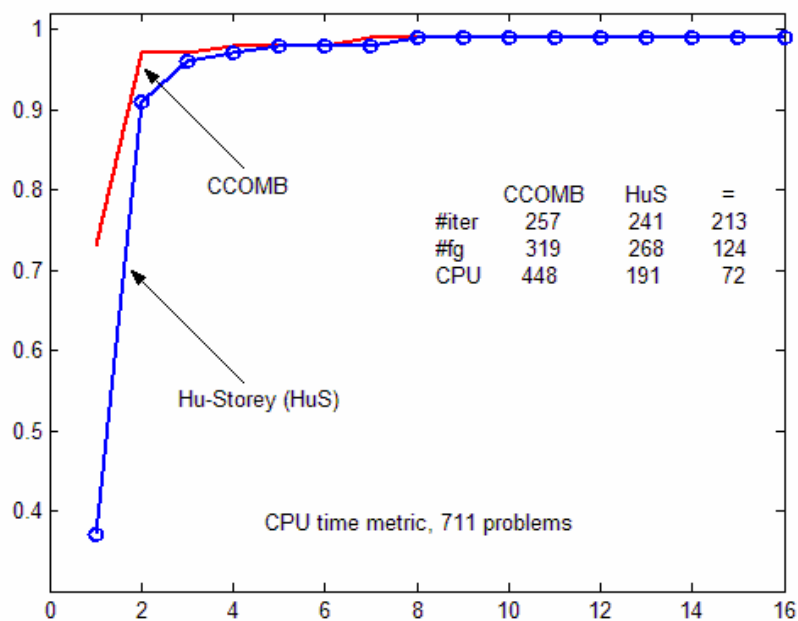


Fig. 7. Performance profiles CCOMB versus HuS. CCOMB with angle restart.

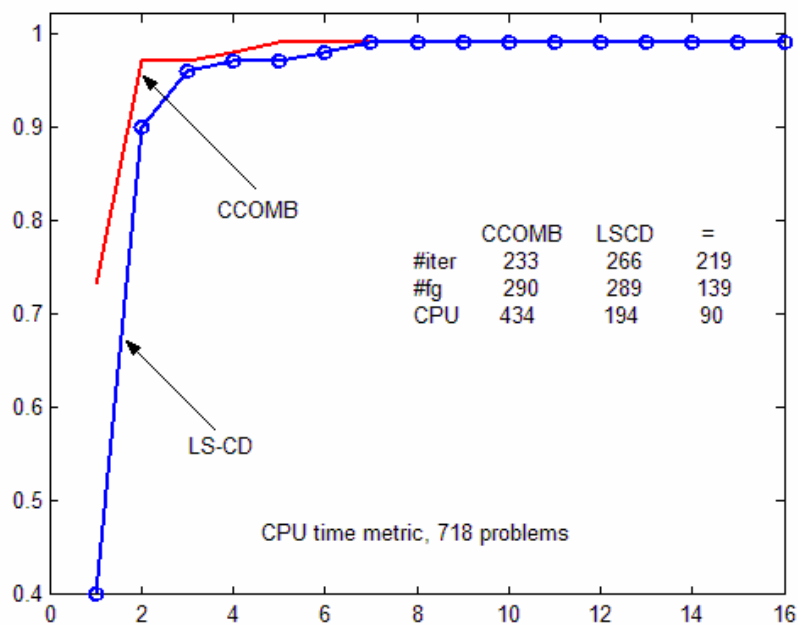


Fig. 8. Performance profiles CCOMB versus LS-CD. CCOMB with angle restart.

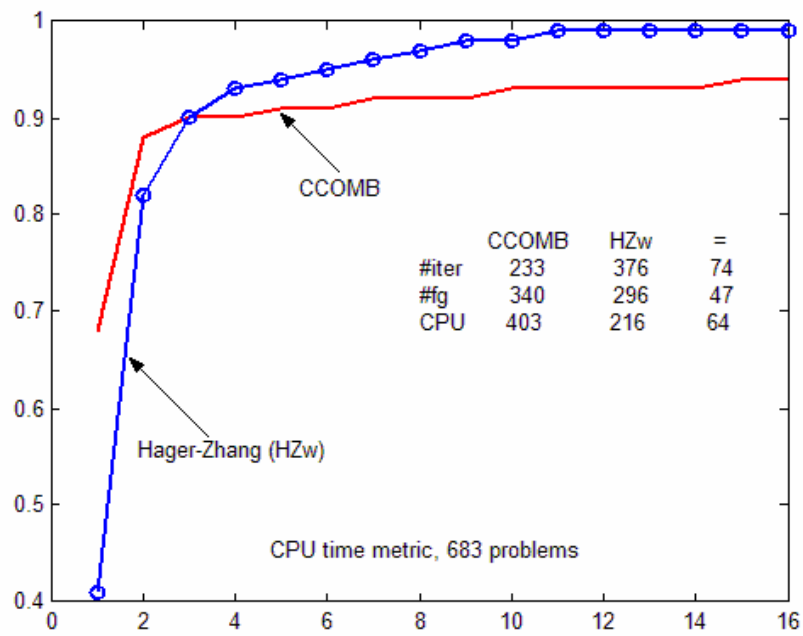


Fig. 9. Performance profiles CCOMB versus HZw. CCOMB with angle restart.

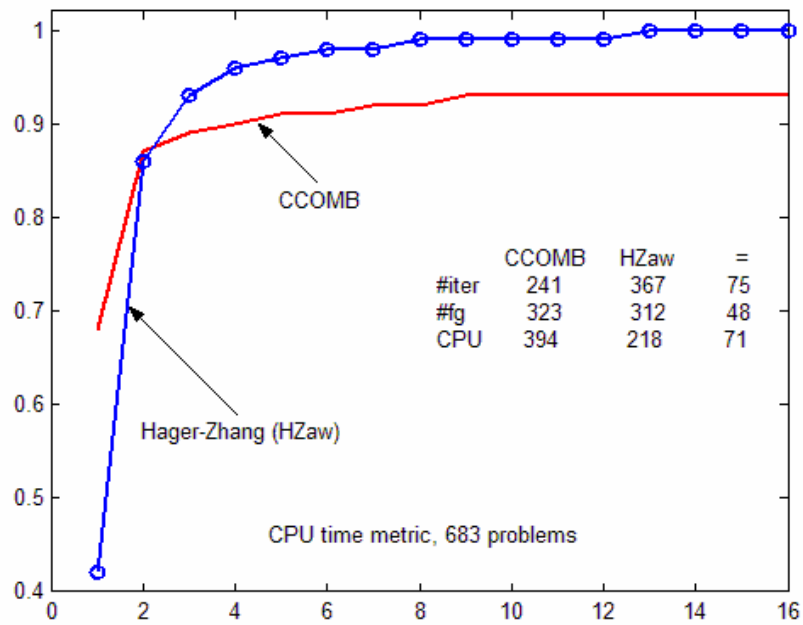


Fig. 10. Performance profiles CCOMB versus HZaw. CCOMB with angle restart.

Powell restart

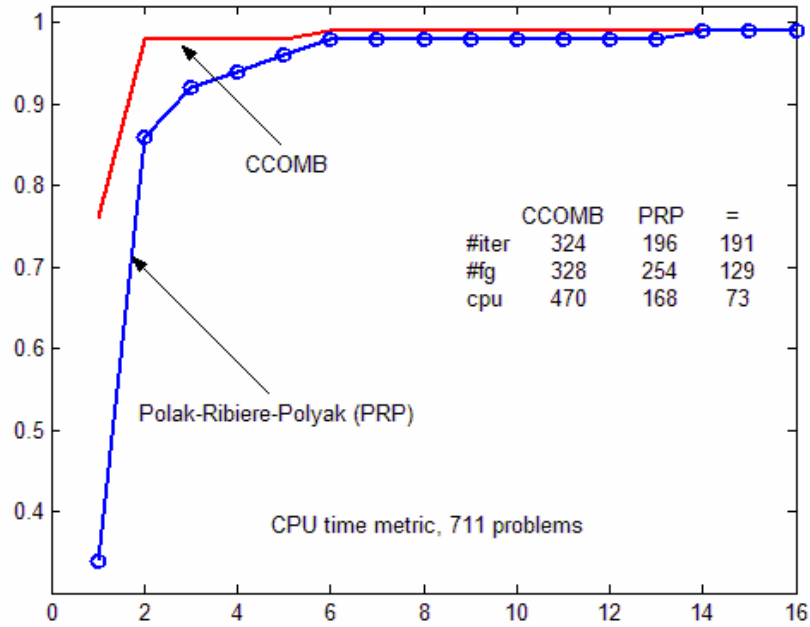


Fig. 11. Performance based on CPU time. CCOMB versus Polak-Ribière-Polyak (PRP).

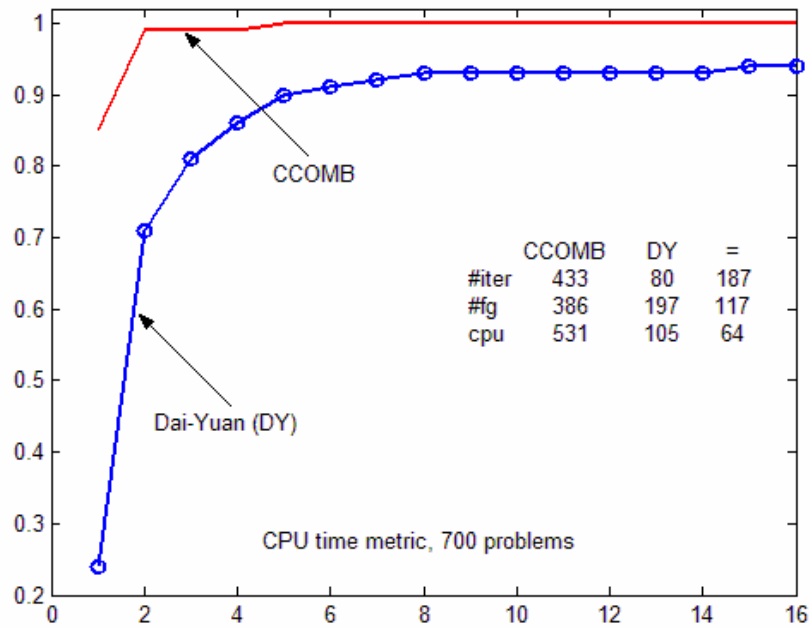


Fig. 12. Performance based on CPU time. CCOMB versus Dai-Yuan (DY).

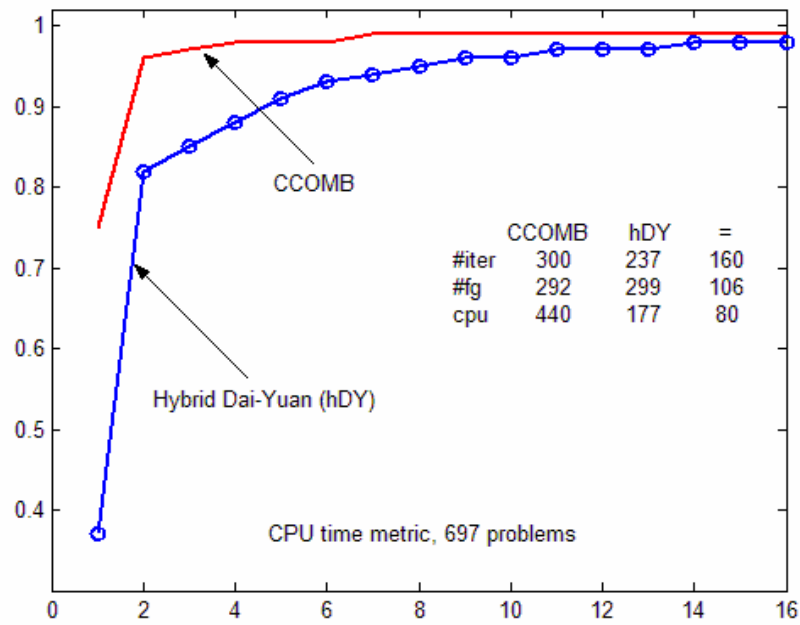


Fig. 13. Performance based on CPU time. CCOMB versus hybrid Dai-Yuan (hDY).

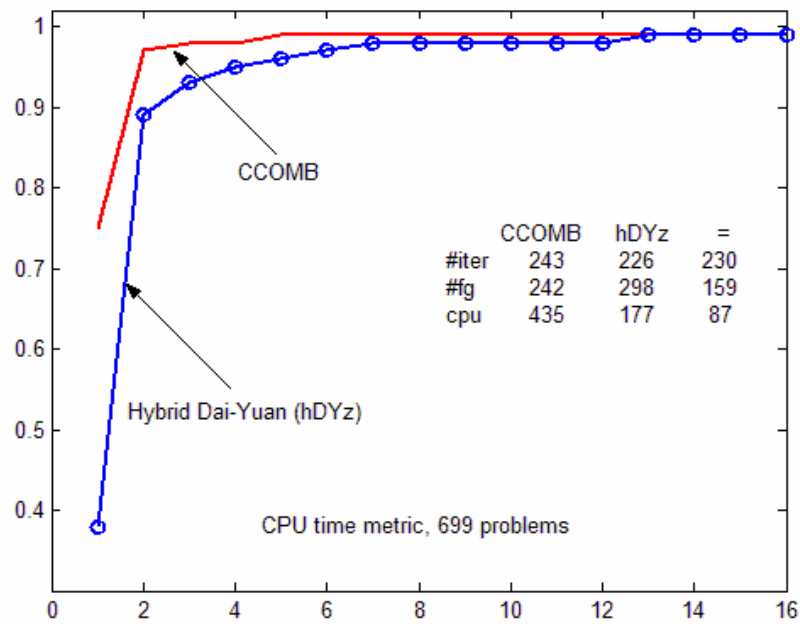


Fig. 14. Performance based on CPU time. CCOMB versus hybrid Dai-Yuan (hDYz).

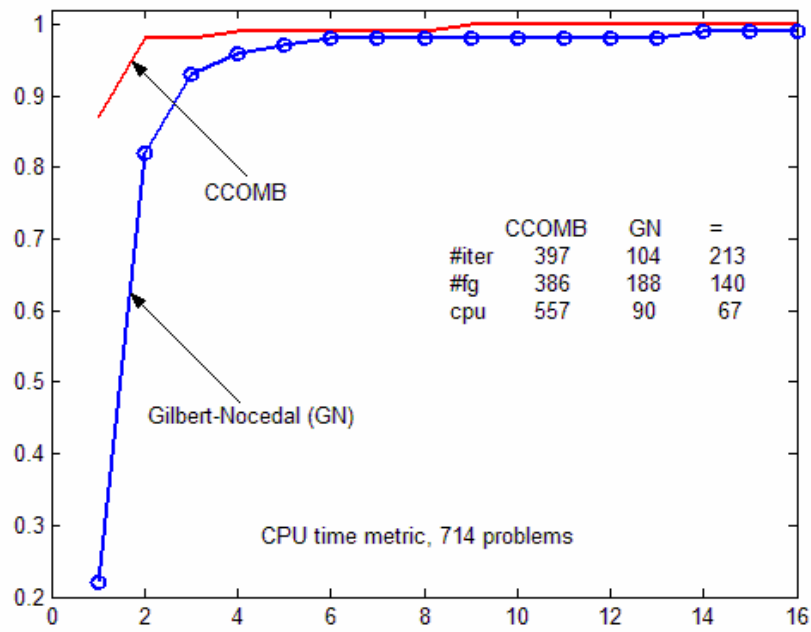


Fig. 15. Performance based on CPU time. CCOMB versus Gilbert-Nocedal (GN).

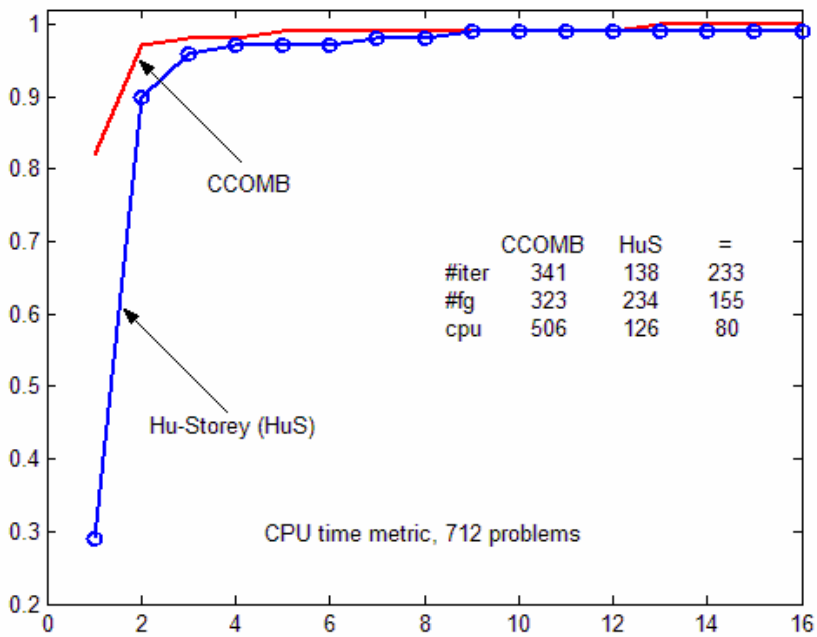


Fig. 16. Performance based on CPU time. CCOMB versus Hu-Storey (HuS).

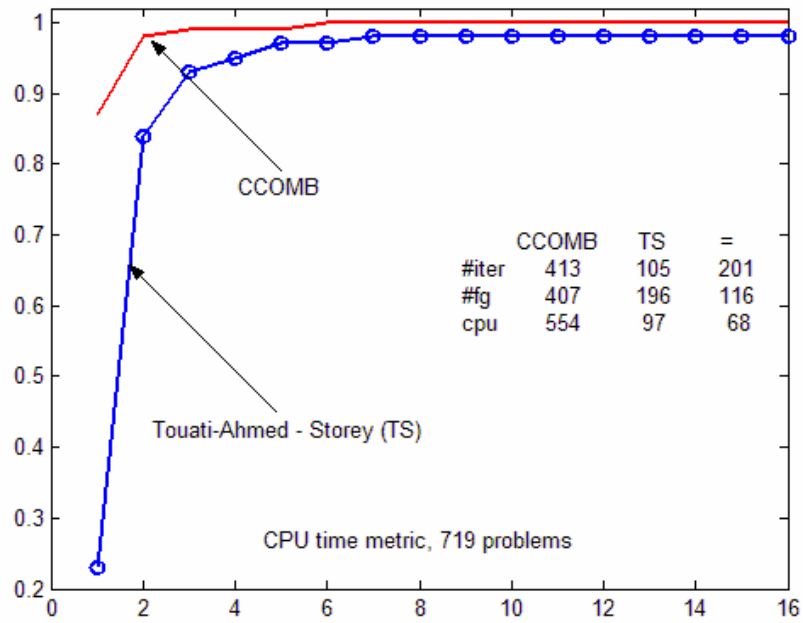


Fig. 17. Performance based on CPU time. CCOMB versus Touati-Ahmed - Storey (TS).

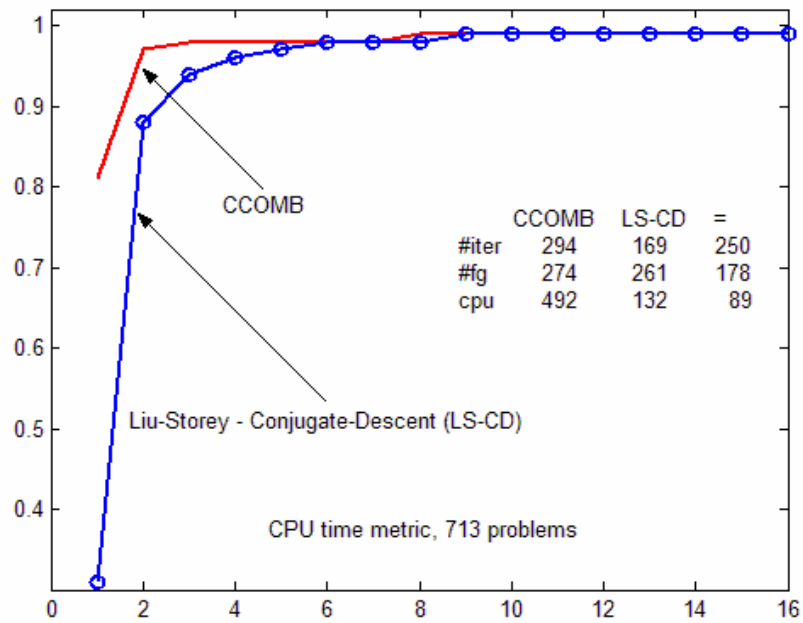


Fig. 18. Performance based on CPU time. CCOMB versus Liu-Storey – Conjugate Descent (LS-CD).

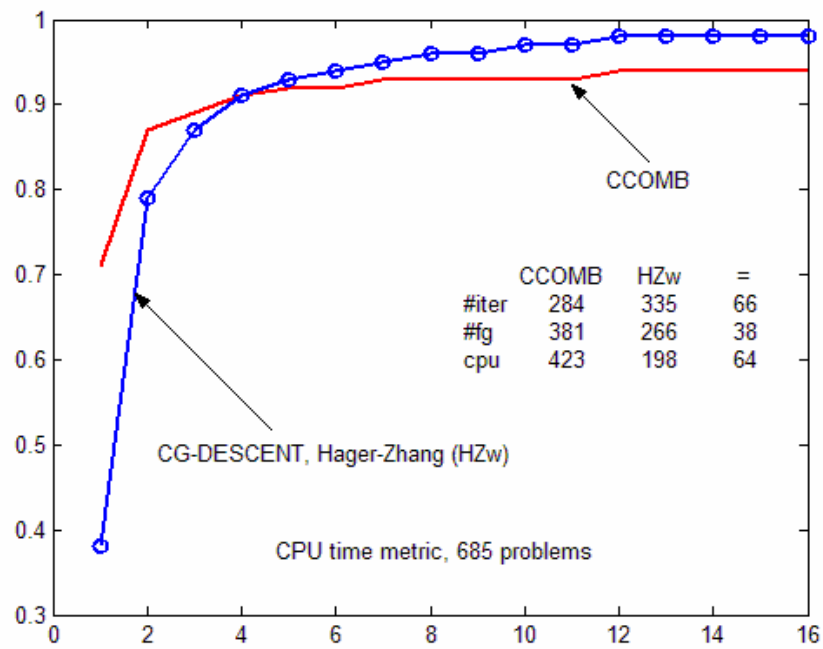


Fig. 19. Performance based on CPU time. CCOMB versus CG_DESCENT with Wolfe line search (HZw).

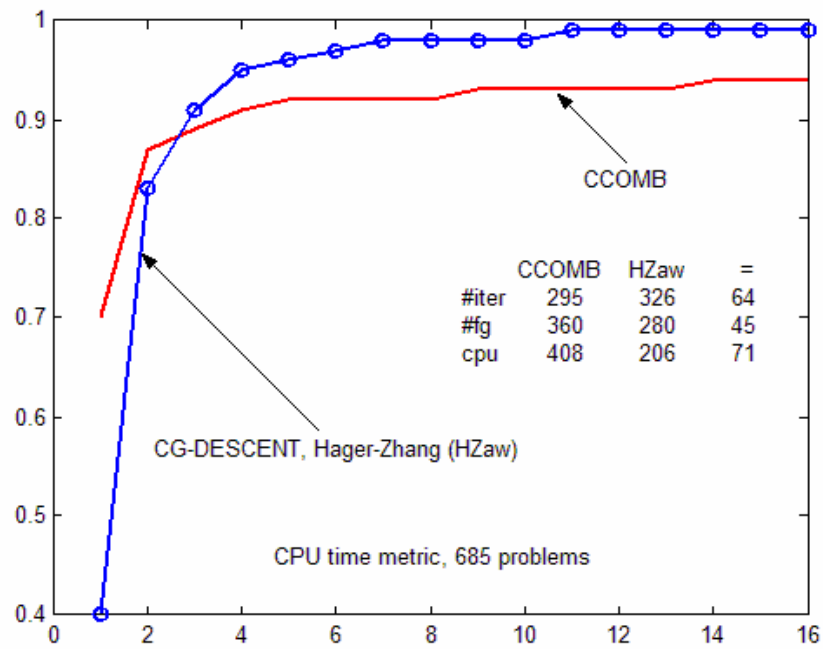


Fig. 20. Performance based on CPU time. CCOMB versus CG_DESCENT with approximate Wolfe line search (HZaw).

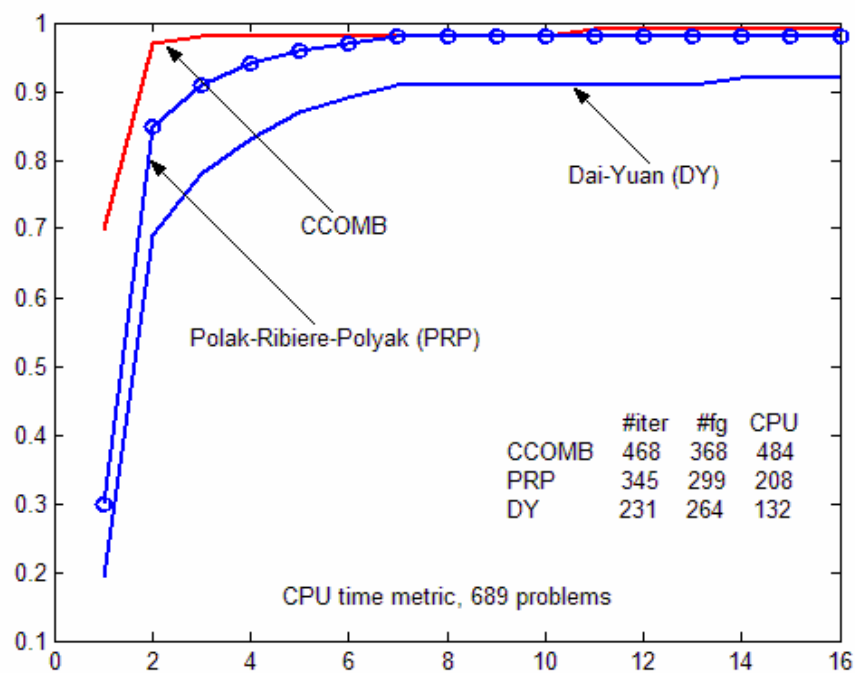


Fig.21. Performance profiles: CCOMB, PRP, DY. CPU time metric.
Powell restart

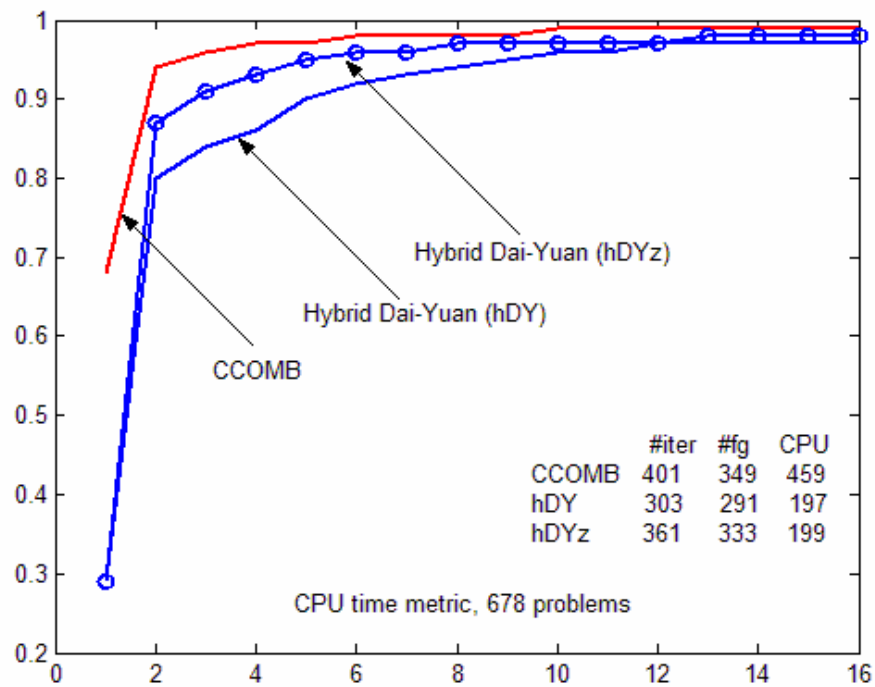


Fig.22. Performance profiles: CCOMB, hDY, hDYz. CPU time metric.
Powell restart.

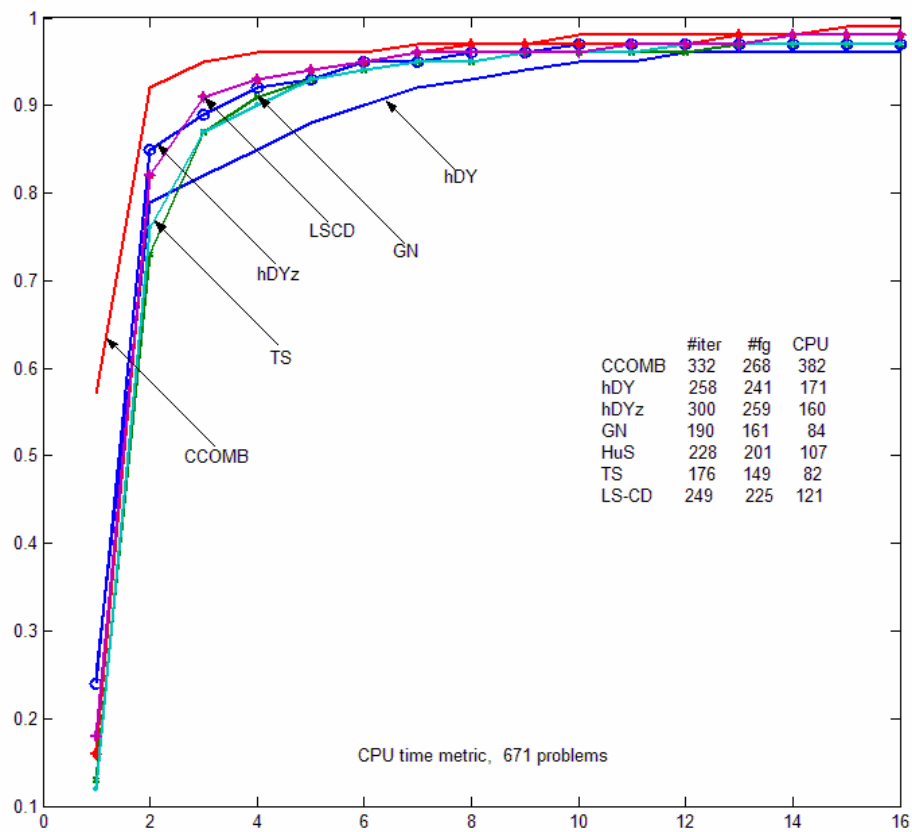


Fig. 23. Performance profiles: CCOMB versus hybrid conjugate gradient algorithms. CPU time metric. Powell restart.

References

1. N. Andrei, *A hybrid conjugate gradient algorithm for unconstrained optimization*. February 24, 2007.

February 24, 2007