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Solving linear recurrence systems using level 2 and 3 BLAS routines.

Wyrzykowski, Roman (ed.) et al., Parallel processing and applied mathematics. 5th international conference, PPAM 2003, Częstochowa, Poland, September 7–10, 2003. Revised papers. Berlin: Springer (ISBN 3-540-21946-3/pbk). Lecture Notes in Computer Science 3019, 1059-1066 (2004).

Summary: The aim of this paper is to present a new efficient BLAS-based algorithm for solving linear recurrence systems with constant coefficients, which can be easily and efficiently implemented on shared or distributed memory machines and clusters of workstations. The algorithm is based on level 3 and level 2 BLAS routines `_GEMM`, `_GEMV` and `_TRMV`, which are crucial for its efficiency even when the order of a system is relatively high. The results of experiments performed on a dual-processor Pentium III computer are also presented and discussed.

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