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Parallel evaluation of Chebyshev and trigonometric series. (English) Zbl 0979.65002

Summary: We introduce a general parallel algorithm for the evaluation of Chebyshev and trigonometric series. The algorithm is based on a recurrence property that allows the effective implementation on partial sums that can be calculated independently. Several examples, carried out on a Cray T3D, are provided comparing the parallel algorithms of C. W. Clenshaw [Math. Tables Aids Comput. 9, 118-120 (1955; Zbl 0065.05403)] and of G. E. Forsythe [J. Soc. Ind. Appl. Math. 5, 74-88 (1957; Zbl 0083.35503)].

MSC:
65B10 Numerical summation of series
65Y05 Parallel numerical computation

Keywords:
numerical examples; polynomial evaluation; Chebyshev and trigonometric sums; parallel algorithm

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References:

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