A parallel DIRK method for stiff initial-value problems

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Abstract: In this note we propose a fast parallel iteration process for solving a low-order implicit Runge-Kutta method. The resulting scheme can be regarded as a parallel singly diagonally implicit Runge-Kutta (PDIRK) method. On a two-processor computer, this method requires effectively the solution of two implicit relations per step. By two numerical experiments we compare this method with some sequential methods from the literature, and show its efficient behaviour. ?? 1994.

Author Keywords: Parallelism; Predictor-corrector methods; Runge-Kutta methods

Year: 1994
Source title: Journal of Computational and Applied Mathematics
Volume: 54
Issue: 1
Page : 121-127
Cited by: 4
Link: Scorpus Link
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ISSN: 3770427
Language of Original Document: English
Abbreviated Source Title: Journal of Computational and Applied Mathematics
Document Type: Article
Source: Scopus
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