

**Butcher, J. C.**

**Optimal order and stepsize sequences.** (English) Zbl 0615.65076

IMA J. Numer. Anal. 6, 433-438 (1986).

This is a re-examination of the criteria for selecting orders and stepsizes in variable-order variable-step implementations of standard methods for solving ordinary differential equations. Although the author's principal result, consisting of the solution of an optimization problem based on his mathematical model of the selection process, is couched in mathematical terms, he also gives a useful informal interpretation: "the order multiplied by the error per work done should be maintained constant from step to step, and the order  $p$  selected for any step should be the one which minimizes the product of  $p + 1$  and the error per unit step".

Reviewer: J.Oliver

**MSC:**

**65L05** Numerical methods for initial value problems involving ordinary differential equations

**34A34** Nonlinear ordinary differential equations and systems

Cited in **1** Review  
Cited in **5** Documents

**Keywords:**

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