A New class of block methods and their stability properties with application to numerical solutions of ODEs

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Abstract

A new class of multistage and multistep integration methods which can obtain r new values at each step are studied. Their stability regions were obtained by locus plot and were sketched by MATLAB, and the results show these regions are either A-stable or -stable. Their applications to numerical solution of nonstiff and stiff equations were examined.

Keyword：Multistage and multistep methods, A-stable, -stable, Stiff equations