NEWTON TYPE INTERVAL METHODS FOR SOLVING NONLINEAR SCALAR EQUATIONS*

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Abstract

The article discusses the Newton's interval method and Ostrowski's interval method. Classical iterative schemes have been modified in intervals and experiments have been performed with the INTLAB program. The results of the proposed modifications are described and compared with Newton's interval method, Ostrowski's interval method and Ostrowski's modified interval method.

MSC: 65H04, 65H05

keywords: Newton's interval method, Ostrowski's interval method, INTLAB, MATLAB

1 Introduction

To solve nonlinear equations iterative schemes are used, the most famous of which is Newton's method. There are many modifications of the Newton's method, which improve the order of convergence [1, 2, 3, 4, 5, 10, 15, 16, 17]. In addition to the classic iteration schemes, interval methods are also used to