On Interval Methods of the BDF Type
for Solving the Initial Value Problem

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Abstract. In the paper the interval methods of the BDF type for solving the initial value problem (IVP) for ordinary differential equations (ODEs) are given. We introduce an explicit and an implicit interval version of the methods, and present the theorems which guarantee that the exact solution belongs to the interval solutions obtained by the methods. The widths of such interval solutions are also estimated.

Key words: interval methods, interval versions of the BDF methods, solving the initial value problem