CARPATHIAN J. MATH. **20** (2004), No. 1, 67 - 72

Numerical experiment with the embedded Runge-Kuta formulae of the 6th order to the 5th order

MARCELA LASCSÁKOVÁ and VLADIMIR PENJAK

ABSTRACT. In this paper we devote oneself to the numerical experiment with the embedded Runge-Kutta formulae of the 6th order to the 5th order. We deal with an influence of changing maximum allowable local errors and inserting either y_n or y_n to the embedded formulae on the accuracy of the approximate solution. We try to verify an advantage of using empirically deriving constant. The numerical solutions of two particular examples by using programming language Pascal are shown.

DEPARTMENT OF APPL. MATHEMATICS FACULTY OF MECHANICAL ENGINEERING TECHNICAL UNIVERSITY KOŠICE LETNÁ 9, 041 87 KOŠICE SLOVAKIA *E-mail address*: marcela.lascskova@tuke.sk DEPARTMENT OF APPLIED MATHEMATICS AND ECONOMICAL INFORMATICS

ECONOMICAL FACULTY TECHNICAL UNIVERSITY KOŠICE NĚMCOVEJ 32, 040 01 KOŠICE SLOVAKIA *E-mail address*: vladimir.penjak@tuke.sk