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ON ACCURACY OF NUMERICAL-ANALYTICAL SOLUTION EXPRESSION FOR HYPERCHAOTIC ROSSLER SYSTEM

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Abstract. Analytical solution for hyperchaotic systems have attracted increasing interest in recent years. In this paper, numerical-analytical solution for hyperchaotic Rössler system is obtained via multistage homotopy analysis method (MSHAM). An analytical form of the solution within each time interval is given, which is not possible using standard numerical methods. The numerical results obtained by the MSHAM and the classical fourth-order RungeKutta (RK4) method are in complete agreement. Moreover the residual error for MSHAM solution is defined and calculated. The obtained residual error gives accuracy with 14 Digits.

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