

Publications results for "Author=(sergeyev, y*)"

MR3683174 [Reviewed](#)

[Amodio, P.\(I-BARI\)](#)

Dipartimento di Matematica, Università di Bari
70125 Bari, Italy

; [Iavernaro, F.\(I-BARI\)](#)

Dipartimento di Matematica, Università di Bari
70125 Bari, Italy

; [Mazzia, F.\(I-BARI\)](#)

Dipartimento di Matematica, Università di Bari
70125 Bari, Italy

; [Mukhametzhano, M. S.\(I-CLBR-IME\)](#)

Dipartimento di Ingegneria Informatica, Modellistica, Elettronica e Sistemistica (DIMES),
Università della Calabria

87036 Arcavacata di Rende (Cosenza), Italy

; [Sergeyev, Ya. D.\(I-CLBR-IME\)](#)

Dipartimento di Ingegneria Informatica, Modellistica, Elettronica e Sistemistica (DIMES),
Università della Calabria

87036 Arcavacata di Rende (Cosenza), Italy

A generalized Taylor method of order three for the solution of initial value problems in standard and infinity floating-point arithmetic. (English summary)

[Math. Comput. Simulation](#) **141** (2017), 24–39.

[65L06 \(41A58 65G99\)](#)

There are two main aims of this paper. To present a new third-order Taylor like method for solving initial value problems, and to illustrate the gains in accuracy from using the Infinity Computer instead of standard floating point arithmetic when employing a finite difference approximation to the first derivative. The numerical results in the paper clearly show the improvement in accuracy at the more stringent accuracy requirements when the Infinity Computer is used.

The paper contains a brief summary of the arithmetic on the Infinity Computer. This summary could well be of general interest.

Reviewed by [Philip W. Sharp](#)

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Citations

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