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Livija Cveticanin

Faculty of Technical Sciences, Department of Mechanics
University of Novi Sad



Homotopy-perturbation method for pure nonlinear differential equation

Author(s): Cveticanin, L (Cveticanin, L.)

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Times Cited: 113 (from Web of Science)

Cited References: 35 [[view related records](#)]  [Citation Map](#)

Abstract: In this paper, the homotopy-perturbation method proposed by J.-H. He is adopted for solving pure strong nonlinear second-order differential equation. For the oscillatory differential equation the initial approximate solution is assumed in the form of Jacobi elliptic function and the forementioned method is used for obtaining of the approximate analytic solution. Two types of differential equations are considered: with strong cubic and strong quadratic nonlinearity. The obtained solution is compared with exact numerical one. The difference between these solutions is negligible for a long time period. The method is found to work extremely well in the examples, but the theoretical reasons are not yet clear. (c) 2005 Elsevier Ltd. All rights reserved.

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Reprint Address: Cveticanin,

Addresses:

1. Univ Novi Sad, Fac Tech Sci, Novi Sad 21000, Serbia

E-mail Address: cveticanin@uns.ns.ac.yu

This article is a *Highly Cited Paper*
It is within the most influential 1% of the
world's publications in physics of 2006



Livija Cveticanin

Faculty of Technical Sciences, Department of Mechanics
University of Novi Sad



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Full Text

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Title: **The homotopy-perturbation method applied for solving complex-valued differential equations with strong cubic nonlinearity**

Author(s): Cveticanin L.

Source: JOURNAL OF SOUND AND VIBRATION Volume: 285 Issue: 4-5 Pages: 1171-1179 DOI: 10.1016/j.jsv.2004.10.026 Published: AUG 6 2005

Times Cited: 29 (from Web of Science)



Full Text

View abstract

Title: **APPROXIMATE ANALYTICAL SOLUTIONS TO A CLASS OF NONLINEAR EQUATIONS WITH COMPLEX FUNCTIONS**

Author(s): CVETICANIN L.

Source: JOURNAL OF SOUND AND VIBRATION Volume: 157 Issue: 2 Pages: 289-302 DOI: 10.1016/0022-460X(92)90682-N Published: SEP 8 1992

Times Cited: 25 (from Web of Science)



Full Text

Title: **VIBRATIONS OF A TEXTILE MACHINE ROTOR**

Author(s): CVETICANIN L.

Source: JOURNAL OF SOUND AND VIBRATION Volume: 97 Issue: 2 Pages: 181-187 DOI: 10.1016/0022-460X(84)90317-1 Published: 1984

Times Cited: 19 (from Web of Science)



Full Text

Title: **Analytic approach for the solution of the complex nonlinear differential equation**

Author(s): Cveticanin L.

Source: PHYSICA A Volume: 297 Issue: 3-4 Pages: 348-358 Published: 2001

Times Cited: 18 (from Web of Science)



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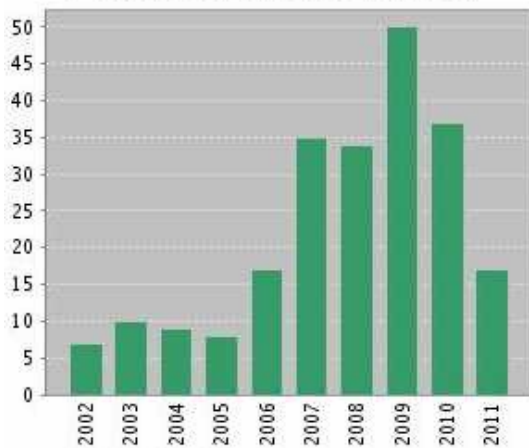
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Mathematical institute
Serbian Academy of Science



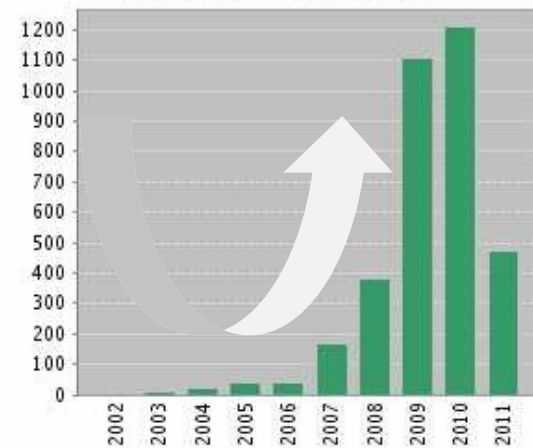
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Source: ARS COMBINATORIA Volume: 88 Pages: 125-127 Published: JUL 2008

Times Cited: 84 (from Web of Science)

Cited References: 12 [view related records]

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| COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS | 97 | 5 | Q1 |
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