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NEW HOT PAPERS - 2009

March 2009

📄 PDF

Saeid Abbasbandy talks with *ScienceWatch.com* and answers a few questions about this month's New Hot Paper in the field of Mathematics.

SW: Why do you think your paper is highly cited?

In this paper, a new and powerful method, i.e., the Homotopy analysis method (HAM) is used for solving a famous differential equation. We show that the solution obtained by an older method like the Adomian decomposition method (ADM), is a special case of the HAM solution.

SW: Does it describe a new discovery, methodology, or synthesis of knowledge?

Yes, this paper describes a new methodology, named the "Homotopy analysis method" which was first introduced in 1992 by Prof. Shijun J. Liao of the Shanghai Jiaotong University in Shanghai, P. R. China.

SW: Would you summarize the significance of your paper in layman's terms?

In this paper, we found the series solution of the quadratic Riccati equation by HAM and we made a comparison with older methods.

SW: How did you become involved in this research, and were there any problems along the way?

Before the publication of this paper, I had already published several papers on the Riccatti equation. I first become acquainted with this method while in China when, through my studies with Prof. Shijun J. Liao, I began to concentrate on this area of research.

SW: Where do you see your research leading in the future?

I will continue my research into this topic and also into the so-called "Fuzzy Numerical Mathematics." I want to combine HAM with fuzzy numerical mathematics for solving some fuzzy partial differential equations.

I would like to thank my University for their continued financial support for my research and also I'd like to thank my Ph.D. supervisor, Prof. Esmail Babolian, of the Institute for Studies in Theoretical Physics and

Mathematics (IPM) in Tehran, Iran.

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