

ScienceWatch Home
Interviews

Featured Interviews

Author Commentaries

Institutional Interviews

Journal Interviews

Podcasts

Analyses

Featured Analyses

What's Hot In...

Special Topics

Data & Rankings

Sci-Bytes

Fast Breaking Papers

New Hot Papers

Emerging Research Fronts

Fast Moving Fronts

Research Front Maps

Current Classics

Top Topics

Rising Stars

New Entrants

Country Profiles

About Science Watch

Methodology

Archives

Contact Us

RSS Feeds

Inside This Month...

scienceWATCH.com

TRACKING TRENDS & PERFORMANCE IN BASIC RESEARCH

Interviews

Analyses

Data & Rankings

2008 : October 2008 - Fast Breaking Papers : Eqab M. Rabei & Dumitru Baleanu

FAST BREAKING PAPERS - 2008

October 2008



Eqab M. Rabei & Dumitru Baleanu talk with *ScienceWatch.com* and answer a few questions about this month's Fast Breaking Paper in the field of Mathematics.



Article Title: The Hamilton formalism with fractional derivatives

Authors: Rabei, EM;Nawafleh, KI;Hijawi, RS;Muslih, SI;Baleanu, D

Journal: J MATH ANAL APPL

Volume: 327

Issue: 2

Page: 891-897

Year: MAR 15 2007

* Mutah Univ, Dept Phys, Al Karak, Jordan.

* Mutah Univ, Dept Phys, Al Karak, Jordan.

(addresses have been truncated)

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

The paper is highly cited because it describes a new method in the emerging field of fractional calculus. Also the field of the physical applications of fractional calculus is a hot subject.

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

The method describes a new methodology to treat fractional dynamical systems.

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

This new methodology is quite useful in discussing fractional dynamics and its applications. Some possible applications are the quantization of nonconservative systems using fractional calculus and the fractional quantization of constrained systems.

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

Eqab M. Rabei first became involved in this research by reading some old papers on variational principles involving fractional terms.

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

The results obtained in the paper will provide a solid basis for understanding the fractional quantization method for discrete dynamical systems.

Professor Eqab M. Rabei




Coauthor
Dumitru Baleanu

Physics Department
Al al-Bayt university
Mafraq, Jordan

Professor Dumitru Baleanu
Faculty of Art and Sciences
Department of Mathematics and Computer Science
Cankaya University
Ankara, Turkey

Keywords: Hamilton formalism, fractional calculus, fractional dynamical systems, fractional quantization of constrained systems, fractional quantization method, discrete dynamical systems.



[back to top](#) 

2008 : [October 2008 - Fast Breaking Papers](#) : Eqab M. Rabei & Dumitru Baleanu

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