Accepted Manuscript

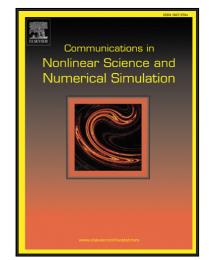
Fractional Calculus via Laplace Transform and its Application in Relaxation Processes

E. Capelas de Oliveira, S. Jarosz, J. VazJr.

 PII:
 S1007-5704(18)30293-4

 DOI:
 https://doi.org/10.1016/j.cnsns.2018.09.013

 Reference:
 CNSNS 4640



To appear in: Communications in Nonlinear Science and Numerical Simulation

Received date:5 February 2018Revised date:17 June 2018Accepted date:11 September 2018

Please cite this article as: E. Capelas de Oliveira, S. Jarosz, J. VazJr., Fractional Calculus via Laplace Transform and its Application in Relaxation Processes, *Communications in Nonlinear Science and Numerical Simulation* (2018), doi: https://doi.org/10.1016/j.cnsns.2018.09.013

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Highlights

- A unifying approach to fractional derivatives based on the theories of distributions and of Laplace transform is provided, elucidating the relation between the Riemann-Liouville and the Caputo definitions, and showing how these and other definitions can be generalized.
- The application of fractional derivatives in relaxation processes based on different definitions of fractional derivative is discussed. It is showed that models based on two recently proposed definitions have to be discarded due to problems in matching the initial conditions of the fractional differential equations.

CHERTER MAN

Download English Version:

https://daneshyari.com/en/article/10226395

Download Persian Version:

https://daneshyari.com/article/10226395

Daneshyari.com