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Fractional Dynamics | SpringerLink
The present state-of-the-art article is devoted to the analysis of new trends and recent results carried out during the last 10 years in the field of fractional calculus application to dynamic problems of solid mechanics. This review involves the papers dealing with study of dynamic behavior of linear and nonlinear 1DOF systems, systems with two and more DOFs, as well as linear and nonlinear ...

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Some Applications of Fractional Calculus in Engineering ...
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Operators of Fractional Calculus and Their Applications
In the fields of dynamical systems and control theory, a fractional-order system is a dynamical system that can be modeled by a fractional differential equation containing derivatives of non-integer order. Such systems are said to have fractional dynamics. Derivatives and integrals of fractional orders are used to describe objects that can be characterized by power-law nonlocality, power-law long-range dependence or fractal properties. Fractional-order systems are useful in studying the anomalous

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Fractional Dynamics Applications of Fractional Calculus to Dynamics of Particles, Fields and Media; pp.457-466; Vasily Tarasov. In the quantum mechanics, the observables are given by self-adjoint ...

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Dumitru's research interests include fractional dynamics and its applications, fractional differential equations, dynamic systems on time scales, Hamilton-Jacobi formalism, Lie symmetries. He has published more than 600 papers indexed in SCI. He is one of the editors of 5 books published by Springer, one published by AIP Conference Proceedings ...