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Fractal Theory and Models in Nonlinear Dynamics and Their Applications

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Message from the Guest Editors

Fractal structures emerge organically in nonlinear dynamics, and their phase space represents complex dynamic systems. An increased understanding of such constructions is helpful for obtaining information about the future behavior of complex dynamic systems, since this provides fundamental knowledge about the relation between these systems, uncertainty and indeterminism. Currently, using a fractal-fractional calculus to capture self-similarities in chaotic attractors facilitates an enhanced understanding of stability, bifurcations, and intermittency in dynamic systems. Nonlinear dynamics occur in mathematical physics; engineering applications; theoretical and applied physics, such as quantum mechanics; and signal analysis, among others. This Special Issue aims to advance research on topics relating to the theory, design, implementation, and application of fractal theory and models in nonlinear dynamics and their applications.

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