

Special Issue

Chaos and Complexity in Fractional Order Systems and Their Applications

Message from the Guest Editors

Both fractional calculus and chaos theory have various applications in science and engineering. In recent decades, many numerical techniques and tools have been developed for solving and analyzing fractional-order systems. Specifically, fractional-order chaotic systems have been proposed, which exhibit complex behaviors, including multi-scroll and hidden attractors. Fractional-order chaotic systems have also been utilized in biological and financial modeling. Hence, the control and synchronization of such models have been widely investigated. Robotic motion control can also benefit from the advantages of fractional-order chaos. Many other applications, e.g., digital communication, data privacy, and encryption, require more degrees of freedom in the utilized randomness sources to enhance performance. Digital and analog realizations of fractional-order systems make them more amenable to real-life applications. This Special Issue focuses on recent and novel developments and achievements in fractional order systems, their chaotic behavior, analysis, realization, and applications.

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