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Special Issue Reprint

Advances in Difference Equations

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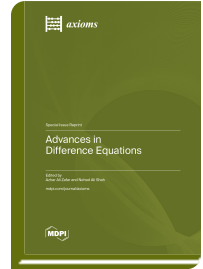
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The aim of this reprint is to highlight the significance of difference equations and their applications in applied mathematics. Difference equations provide a robust and widely recognized framework for modeling complex dynamical systems. In recent years, non-integer order derivative operators have gained attention, particularly for understanding anomalous behaviors in social and physical sciences. The following Special Issue introduces several important developments, including new partial fractional derivatives, a novel nonlinear delayed integral inequality for studying integro-differential equations, and a neural network approach for solving nonlinear partial differential equations. The existence and uniqueness of solutions for nonlinear differential equations with impulses at variable times are discussed, as well as the oscillatory behavior of nonlinear second-order differential equations. Ultimately, this reprint bridges theory and application, offering novel insights with a focus on differential and difference equations.



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