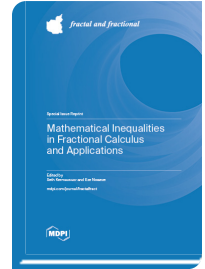*Special Issue Reprint*

Mathematical Inequalities in Fractional Calculus and Applications

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In recent years, fractional differential equations have been used frequently in modelling of real systems in numerous fields of applied sciences. To study the existence, uniqueness, and stability of solutions in a system of fractional differential equations, inequalities involving derivatives and integrals of arbitrary powers, also known as fractional inequalities, have been used. Additionally, fractional inequalities were used to find upper and lower bounds of solutions to a system of fractional differential equations. In addition, fractional inequalities were also used in the fields of probability, numerical quadrature, and many more. Over the years, many authors have extended several generalizations of the various classical inequalities to fractional calculus in the literature.

This reprint is a compilation of fifteen original research articles on mathematical inequalities involving fractional derivatives and fractional integral operators and their many applications in various mathematical and related fields. The topics include: fractional integral inequalities; Inequalities of generalized functions in fractional calculus; Q-calculus; Inequalities in fractional calculus on time scales; fractional order derivatives; applications of fractional inequalities; fractals; non-local mathematical models; and fractional complicated systems.

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