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★**Theory and applications of fractional differential equations.**

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Integration and differentiation of fractional order is an intriguing branch of analysis which has many applications. Apart from diverse areas of mathematics, fractional integrals and derivatives and the relevant integral and differential equations arise in rheology, dynamical processes in self-similar and porous structures, fluid flows, electrical networks, viscoelasticity, chemical physics, and many other branches of science. The book under review collects much information on this subject and contains more than 900 references.

The book consists of eight chapters. The main focus is differential equations of fractional order in one and several variables and their applications. It also contains useful information about fractional integrals and derivatives, basic integral transforms, special functions, and many interesting historical facts about fractional calculus and its use in different branches of science.

Chapter 1 contains preliminaries including function spaces, generalized functions, integral transforms and special functions. In Chapter 2, the authors collect useful facts about fractional integrals and derivatives of functions of one and several variables. Chapters 3, 4, 5 and 7 are devoted to diverse topics of the theory of differential equations of fractional order. Chapter 6 deals with partial fractional differential equations. Chapter 8 contains information about the application of fractional differential equations to physical problems and its connection with other areas of science.

The book may be useful both to mathematicians and researchers in different disciplines, including the physical and engineering sciences. *B. S. Rubin*