

**FRACTIONAL INTEGRAL AND FRACTIONAL
DIFFERENTIAL EQUATIONS IN FLUID MECHANICS**

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Abstract

This paper is concerned with some basic properties of the classical and modern definitions of fractional derivatives and fractional integrals. Special attention is given to recent examples of applications in fractional ordinary differential equations, fractional partial differential equations, and fractional integral equations. Several examples of fractional partial differential equations in fluid mechanics are presented. Included are Green's functions of fractional differential equations and fractional Schrödinger equation in quantum mechanics.

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