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Uniqueness of the partial integro-differential equations. (English) Zbl 07543117
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Summary: We study the uniqueness of solutions for certain partial integro-differential equations with the initial conditions in a Banach space. The results derived are new and based on Babenko’s approach, convolution and Banach’s contraction principle. We also include several examples for the illustration of main theorems.

MSC:
26A33 Fractional derivatives and integrals
34A12 Initial value problems, existence, uniqueness, continuous dependence and continuation of solutions to ordinary differential equations
45E10 Integral equations of the convolution type (Abel, Picard, Toeplitz and Wiener-Hopf type)

Keywords:
Babenko’s approach; Banach’s fixed point theorem; gamma function; partial Riemann-Liouville fractional integral; Mittag-Leffler function

Full Text: DOI

References:

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