



North Caucasus Center for Mathematical Research  
of the Vladikavkaz Scientific Center of the RAS  
Southern Mathematical Institute  
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International Seminar  
"Operator Theory, Differential Equations and their Applications"

Seminar Chairmen: Prof. Anatoly G. Kusraev, Prof. Marat A. Pliev  
Seminar Secretary: PhD Batradz B. Tasoev

**November 1, 4 PM (UTC+3)**

Subordination principle and Feynman-Kac formulas  
for generalized time fractional evolution equations

**prof. Yana Kinderknecht (author's pseudonym: Yana A. Butko)**  
Universität Kassel, Germany.

We consider generalized time-fractional evolution equations containing an integral operator with a fairly general memory kernel w.r.t. time variable and a generator of a strongly continuous semigroup (on a Banach space) w.r.t. space variable. In particular, this class of evolution equations includes time- and space- fractional heat and Schrodinger type equations, as well as many equations with Caputo type time-fractional derivatives. Some of these equations are used in models of anomalous diffusion. We show that the subordination principle holds for such evolution equations and obtain Feynman-Kac formulae for solutions of these equations with the use of different stochastic processes, such as subordinate Markov processes and randomly scaled Gaussian processes. In particular, we obtain some Feynman-Kac formulae with generalized grey Brownian motion and other related self-similar processes with stationary increments.

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