

Abstract Submitted
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New integro-differential diffusion equation for continuous time random walk KWOK SAU FA, Universidade Estadual de Maringa, Brazil, KE-GANG WANG, Florida Institute of Technology — We present a new integro-differential diffusion equation for continuous time random walk that is valid for a generic waiting time probability density function. Using this equation we also study diffusion behaviors for a couple of specific waiting time probability density functions such as exponential, and a combination of power law and generalized Mittag-Leffler function. We show that for the case of the exponential waiting time probability density function a normal diffusion is generated and the probability density function is Gaussian distribution. In the case of the combination of a power-law and generalized Mittag-Leffler waiting probability density function we obtain the subdiffusive behavior for all the time regions from small to large times, and probability density function is non-Gaussian distribution.

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