1103-33-6 **Alexey Kuznetsov*** (kuznetsov@mathstat.yorku.ca), Department of Mathematics and Statistics, York University, 4700 Keele Street, Toronto, Ontario M3J 1P3, Canada.

On special functions arising in the theory of stochastic processes.

There exist plenty of examples of applications of analytical techniques and special functions in the theory of stochastic processes. However, it is often overlooked that this connection can also be used in the other direction, that one can use probabilistic techniques and ideas to derive deep and interesting results in the theory of special functions. In this talk I will present several examples of how well-known probabilistic results in the theory of Levy processes and self-similar Markov processes can be creatively applied to obtain new identities and properties related to certain special functions. For example, I will give a simple derivation of the explicit Laplace transform of $f_1(x) = x^{x+c-1}/\Gamma(x+c+1)$ and will show that the functions $f_2(x) = x^{cx}e^{-x}/\Gamma(1+cx)$ and $f_3(x) = e^{-x}I_{cx}(x)$ (here $I_\nu(x)$ denotes the modified Bessel function of the first kind) are completely monotone for all positive values of parameter c. (Received January 22, 2014)