1007-65-151 **Byung Soo Moon*** (bmoon@math.usu.edu), Dept of Mathematics and Statistics, Utah State University, Logan, UT 84321. *Another solution of the Gaussian white noise driven Ornstein-Uhlenbeck equation.* Preliminary report.

There have been many studies on how to solve the Ornstein-Uhlenbeck equation of the form $RI(t) + V(t) - L\frac{dI(t)}{dt} = 0$, with $V(t) = (2kTR)^{\frac{1}{2}}\Gamma(t)$, where $\Gamma(t)$ being a Gaussian white noise. The previous studies have been focused mainly on the cases where the Gaussian white noise $\Gamma(t)$ does not affect the solution by a significant amount so that the major component of the solution is the non-stochastic part. Here, we take the noise to be the major part of the solution and try to separate or remove the non-stochastic energy dissipation part from the noise. In generating the random walk process, we used the result of our earlier work which states that a sum of sinusoidal functions with random amplitudes, random frequencies, and random phases generates a Gaussian white noise. Thus, we use a sequence of points obtained from sampling such functions in the random walk process. We compared the results of our solution with the ones based on the standard method, i.e. the random numbers generated by the Box-Mueller algorithm. We also describe how our solution compares with the experimentally measured curves.

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