

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Where randomness comes from in the quantum walk?**<sup>1</sup> YUTAKA SHIKANO, Dept. Phys., Tokyo Tech / Dept. Mech. Eng., MIT, KOTA CHISAKI, Dept. Appl. Math., Yokohama National University, ETSUO SEGAWA, Dept. Value and Decision Science, Tokyo Tech, NORIO KONNO, Dept. Appl. Math., Yokohama National University — While the quantization of the well-known random walk is called a quantum “random” walk, one has not yet shown the origin and qualification of randomness. To construct an indicator of randomness, we consider the quantum walk with the periodic position measurement. We analytically show the limit distribution of this simple model, which is the obtained distribution as the convergence as the distribution under the proper time scale, to explain the origin and qualification of randomness in the quantum walk. In the presentation, the interpretation of our mathematical result will be focused on.

<sup>1</sup>YS is supported by JSPS (Grant No. 21008624).

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Date submitted: 21 Dec 2009

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