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**Takuya Machida\*** ([bunchin@meiji.ac.jp](mailto:bunchin@meiji.ac.jp)), Meiji University, 1-1-1 Higashi Mita, Tama, Kawasaki, Kanagawa 214-8571, Japan. *Limit distributions of quantum walks and 2nd order linear ordinary differential equations.*

Quantum walks are considered as quantum versions of classical random walks. The limit theorems of discrete- and continuous-time quantum walks on the line have been intensively investigated. Particularly, the limit distributions play an important role in letting us know the spatial distribution of the walkers after many steps. In this presentation, we focus on the standard quantum walks on the line and introduce relationships between their limit distributions and 2nd order linear ordinary differential equations. In addition, by using our results, we discuss connection between discrete- and continuous-time quantum walks. My talk is based on the work with Norio Konno and Tohru Wakasa. (Received September 11, 2012)