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Open Quantum Random Walks

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<p>Quantum Random Walks have been introduced almost 20 years by Y. Aharonov et al. [Phys. Rev. A, 48(2):1687–1690, 1993] and have found wide applications in quantum computing. As is often the case in quantum theory, Quantum Walks differ strongly from classical random walks. In joint work of S. Attal, C. Sabot, F. Petruccione and I. Sinayskiy the concept of Open Quantum Random Walks was introduced, by taking into account dissipation and decoherence that occur in open quantum systems. The connection to classical and unitary random is discussed as well as the potential of Open Quantum Random Walks for quantum computing and efficient quantum transport.

Level (Hons, MSc,
   PhD, other)?

NITheP Researcher

Consider for a student
   award (Yes / No)?

No

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

Yes

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