Contribution ID: **18** Type: **Poster**

Quantum resetting in Szegedy Walk

Tuesday, 16 September 2025 16:01 (1 minute)

Szegedy quantum walks represent a generalization of discrete random walks to the quantum domain, finding broad applications in quantum computing. Recent studies have demonstrated that classical resetting mechanisms can accelerate the arrival of a particle at its target, even in the context of quantum walks. This poster presents an approach to introducing purely quantum resetting into Szegedy walks. Furthermore, it investigates how resetting affects key quantities characterizing the problem of reaching a selected vertex for various graph types, including hitting times and vertex occupation probabilities.

Primary author: Dr CAPAŁA, Karol (AGH University of Krakow)

Co-authors: Ms WITEK, Weronika (AGH University of Krakow); Dr RYCERZ, Katarzyna (AGH University of Krakow)

Presenter: Dr CAPAŁA, Karol (AGH University of Krakow)

Session Classification: Coffee and Poster Session