1139-05-37   **Ada Chan*** (`ssachan@yorku.ca`), **Coutinho Gabriel**, **Christino Tamon**, **Luc Vinet** and **Hanmeng Zhan**. *Fractional revival in continuous-time quantum walk.*

In the continuous-time quantum walk on a graph X, fractional revival from u to v occurs at time τ if

$$e^{-i\tau A} = \alpha e_u + \beta e_v,$$

for some $\alpha, \beta \in \mathbb{C}$. Here e_u and e_v denote the characteristic vectors of vertices u and v, respectively.

Perfect state transfer from u to v and periodicity at u are two special cases of fractional revival with $\alpha = 0$ and $\beta = 0$, respectively. These two properties have been extensively studied but not so much for fractional revival when both α and β are nonzero.

In this talk, we focus on fractional revival between strongly cospectral vertices. We show that, in addition to the few paths and cycles that admit perfect state transfer, there is only one more path and one more cycle that admit fractional revival.

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