

## **Spectral gaps and discrete magnetic Laplacians**

John Stewart Fabila Carrasco

The Laplacian (and its spectrum) is one of the most studied objects in Graph Theory. When the graph is finite, its spectrum is a finite set of eigenvalues, but when the graph is infinite, the spectrum is a more complex object. A generalization of this operator is the discrete magnetic Laplacian (DML).

In this talk we show the existence of spectral gaps of the Laplacian on periodic graphs. For proving this, we analyze the discrete DML on the quotient and interpret the vector potential as Floquet parameter.