

## APERIODIC ORDER IN VISUAL ARTS AND MUSIC

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**Background.** Darren Ong is an associate professor at Xiamen University Malaysia. His main research interests are spectral theory and mathematical physics, with a current focus on studying Schrödinger, Jacobi and CMV operators. He received his PhD from Rice University under the supervision of David Damanik and was a postdoc at the University of Oklahoma. He is the Principal Investigator of a grant funded by the Malaysian Ministry of Education's Fundamental Research Grant Scheme, titled "Spreading rates of quantum random walks in an almost periodic environment, with potential applications in quantum computing". In addition, he is a member of the editorial board of the Bulletin of the Malaysian Mathematical Sciences Society. He is also interested in art that uses mathematical ideas such as aperiodic order in an interesting way.

**Abstract.** Aperiodic order refers to patterns that are not periodic and yet possess a very rigid structure. A famous example is in the diffraction patterns of a quasicrystal. Aperiodic order has received a lot of recent interest in mathematics and physics. For example, Artur Avila won the Fields Medal recently partly for researching aperiodically ordered dynamical systems. In this talk, we will discuss applying aperiodically ordered structures to musical composition and visual art. We will discuss aperiodically ordered tilings in the style of M.C. Escher and musical compositions that use time structures that are aperiodically ordered.

Date: 10th September 2021 (Friday)

Time: 9:30-10:30 AM (Malaysia time)

Link: <https://bit.ly/2V3b6ek> (Via Microsoft Teams)

