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**Jake Fillman\***, 225 Stanger Street, Blacksburg, VA 24061, and **Darren C. Ong** and **Zhenghe Zhang**. *Spectral Characteristics of the Unitary Almost-Mathieu Operator*.

We will discuss the Unitary Almost-Mathieu Operator, which generates a quantum walk on the integers with quasi-periodically distributed coins. We show that its spectrum is a Cantor subset of the circle of zero Lebesgue measure, that the spectral type is almost surely purely singular continuous, and that every spectral parameter is critical in the sense of Avila's global theory for one-frequency cocycles. The key technical ingredients are self-duality under a version of the Fourier transform and an adaptation of the global theory of analytic one-frequency cocycles to the transfer matrix cocycle, which is meromorphic, but not analytic. (Received August 31, 2017)