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**Chun-Kit Lai\*** (cklai@sfsu.edu), Th 928, 1600 Holloway Ave, San Francisco State University, San Francisco, CA 94132, and **Yang Wang**. *Fuglede's spectrum is rational in dimension one.*

A bounded measurable set  $\Omega \subset \mathbb{R}^d$  is called a spectral set if it admits some exponential orthonormal basis  $\{e^{2\pi i\lambda \cdot x} : \lambda \in \Lambda\}$ . Fuglede's conjecture states that a spectral set is equivalent a translational tile. It remains open when  $d = 1, 2$  and was disproved in higher dimensions.

In this talk, we show that in dimension one  $d = 1$ , any spectrum  $\Lambda$  with  $0 \in \Lambda$  of a spectral set with Lebesgue measure normalized to 1 must be rational. Combining this with all previous results due to Lagarias, Wang, Iosevich and Kolountzakis, the Fuglede's conjecture on  $\mathbb{R}^1$  is now equivalent to the validity of the corresponding conjecture on all cyclic groups  $\mathbb{Z}_n$ . (Received September 11, 2019)