On the structure of Tiles and Spectra

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In this talk we will restrict ourselves to the 1-dimensional case of the (so far unsolved) Conjecture of Fuglede, relating Tiles and Spectra. Lagarias and Wang (1996) proved that Tiling sets are periodic and rational. The periodicity of the spectrum was proved more recently. Finally we give a brief commentary on the rationality of the spectrum, which seems to be a harder problem.