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"Spectral implies Tiling" for Three Intervals Revisited

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In \cite{BCKM} it was shown that "Tiling implies Spectral" holds for a union of three intervals and the reverse implication was studied under certain restrictive hypotheses on the associated spectrum. In this paper, we reinvestigate the "Spectral implies Tiling" part of Fuglede's conjecture for the three interval case. We first show that the "Spectral implies Tiling" for two intervals follows from the simple fact that two distinct circles have at most two points of intersections. We then attempt this for the case of three intervals and except for one situation are able to prove "Spectral implies Tiling". Finally, for the exceptional case, we show a connection to a problem of generalized Vandermonde varieties.

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