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Alexei Poltoratski* (alexeip@math.tamu.edu). *Spectral gaps for sets and measures.*

For a closed set S on the real line denote by G_S the supremum of the size of the gap in the support of the Fourier transform of a measure, taken over all finite Borel measures supported on S . The gap problem, which stems from the well-known theorem by Beurling, asks for a formula for G_S in terms of geometric characteristics of S . In my talk I will discuss relations of the gap problem with adjacent fields and present a solution. (Received February 22, 2010)