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**Alexei Poltoratski\*** ([alexeip@math.tamu.edu](mailto:alexeip@math.tamu.edu)). *Spectral gaps for sets and measures.*

Problems on spectral gaps, i.e. gaps in the support of the Fourier transform, for finite complex measures on the real line have been studied by analysts throughout the 20th century. One of the reasons for such prolonged interest is the large number of relations between such problems and other areas of analysis and differential equations. In my talk I will discuss recent solutions to two of such classical problems, the Gap Problem and the Type problem, as well as relations to spectral problems for differential operators. (Received January 20, 2011)