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Alexei Poltoratski* (alexeip@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77843. *Toeplitz kernels and Polya sets.*

A classical lemma by Polya states that any entire function of exponential type zero bounded on the set of integers is a constant. In his 1940 book N. Levinson posed a natural question asking what sets can replace the set of integers in Polya's lemma. Many deep results in this direction were obtained since then, including those by N. Levinson, B. Levin and L. De Branges.

In my talk I will present a solution to the Polya-Levinson problem obtained using the method of Toeplitz kernels. This method was recently developed in our joint project with N. Makarov. It allows one to treat several related problems of classical analysis, such as sampling/uniqueness problems in spaces of analytic functions, spectral problems for second order differential operators, completeness problems for special functions, etc. The main new results presented in this talk were obtained jointly with my student M. Mitkovski. (Received August 26, 2008)