

Meeting on Computational and Analytic Problems in Spectral Theory

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Abstract of Talk

RATIONAL APPROXIMATION OF FUNCTIONS WITH LOGARITHMIC SINGULARITIES

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I will report on the results of my recent work with Dmitri Yafaev (Rennes-1). We consider functions ω on the unit circle with a finite number of logarithmic singularities. We study the approximation of ω by rational functions in the BMO norm. We find the leading term of the asymptotics of the distance in the BMO norm between ω and the set of rational functions of degree n as n goes to infinity. Our approach relies on the Adamyan-Arov-Krein theorem and on the study of the asymptotic behaviour of singular values of Hankel operators. In particular, we make use of the localisation principle, which allows us to combine the contributions of several singularities into a single asymptotic formula.