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Smooth Cauchy transforms and constructive approximations in $H(b)$

We will discuss how construction of certain smooth Cauchy transforms plays a role in constructive approaches to approximations in de Branges-Rovnyak spaces by functions with nice boundary behavior. In particular work of Sergey Khrushchev from 1978 will be mentioned, and we will discuss how constructive proofs of Khrushchev's theorems can be used to develop algorithms for constructive approximations in some special cases of extreme $H(b)$, the main simplifying assumption will be that the symbol b is outer. The talk is based on joint work with Adem Limani from Lund University.