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ON FUNCTIONS OF ω -BOUNDED TYPE IN THE HALF-PLANE

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The lecture gives the basic representations of the general theory of functions of ω -bounded type in the upper half-plane. The starting point are the canonical representations of some Banach spaces $A_{\omega,\gamma}^p$ of holomorphic functions. For $p = 2$ (i.e. in the case of Hilbert spaces) there is a theorem on the orthogonal projection from the corresponding L_ω^2 to A_ω^2 , a Paley-Wiener type theorem and a theorem on a natural isometry between A_ω^2 and the Hardy space H^2 , which is an integral operator along with its inversion. Then the canonical representations of Nevanlinna-Djrbashian type classes of δ -subharmonic functions are given. The functions from the considered spaces and classes can have arbitrary growth near the finite points of the real axis.

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