On Interpolation in Hardy- Orlicz spaces

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Abstract:

The Hardy-Orlicz space H_ϕ is the space of all analytic functions f on the open unit disk D such that the subharmonic function $\phi(|f|)$ has a harmonic majorant on D where ϕ is a modulus function.

H_ϕ^+ is the subspace of H_ϕ consisting of all $f \in H_\phi$ such that $\phi(|f|)$ has a quasi-bounded harmonic majorant on D. If $\phi(x) = x^p$, $0 < p \le 1$, then H_ϕ is the Hardy space H^p and if $\phi(x) = \log(1+x)$, then H_ϕ is the Nevanlinna class N and H_ϕ^+ is the Smirnov class N^+ .In this paper we generalize some of N. Yanagihara's and A. Hartmann's and others interpolation results from N and N^+ to H_ϕ and H_ϕ^+.For that purpose we generalize a canonical factorization theorem to functions in H_ϕ or H_ϕ^+ and introduce an F-space of complex sequences.