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Review: On a Class of Reflexive Toeplitz Operators

Stephan Ramon Garcia
Pomona College

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Hedayatian, K. [Hedayatian, Karim] (IR-SHIR)

On a class of reflexive Toeplitz operators. (English summary)

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For $\alpha \geq 0$, the space \mathcal{H}_α is the Hilbert space of analytic functions on the open unit disk \mathbb{D} arising from the inner product

$$\langle f, g \rangle_\alpha = \sum_{n=0}^{\infty} \frac{\Gamma(\alpha + 1 + n)}{\Gamma(\alpha + 1)n!} \widehat{f}(n) \overline{\widehat{g}(n)},$$

where $f(z) = \sum_{n=0}^{\infty} \widehat{f}(n)z^n$, $g(z) = \sum_{n=0}^{\infty} \widehat{g}(n)z^n$, and Γ denotes the Euler Γ -function. The spaces \mathcal{H}_α are norm equivalent to the Dirichlet-type spaces D_α which correspond to the weight sequence $(n + 1)^\alpha$. The main result of this paper is the following theorem:

Theorem 2. If $u(z)$ is a univalent map on \mathbb{D} such that $u(\mathbb{D})$ is a Carathéodory region, then the operator $T_{u(\bar{z})}$ is reflexive on \mathcal{H}_α .

Reviewed by *Stephan R. Garcia*

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