

Operator Theory and Analytic Function Spaces

Weighted composition operators on the Dirichlet space:
boundedness and spectral properties

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We will discuss boundedness of weighted composition operators $W_{u,\varphi}$ acting on the classical Dirichlet space \mathcal{D} as $W_{h,\varphi}f = h(f \circ \varphi)$ in terms of the *multiplier space* associated to the symbol φ , i.e., $\mathcal{M}(\varphi) = \{u \in \mathcal{D} : W_{u,\varphi} \text{ is bounded on } \mathcal{D}\}$. As one may guess, a prominent role is played by the multipliers of the Dirichlet space. As a consequence, we show the spectrum of invertible weighted composition operators $W_{u,\varphi}$ in \mathcal{D} , extending a recent work of Hyvärinen, Lindström, Nieminen and Saukko [2] to the context of the Dirichlet space.

(Joint work with I. Chalendar (Lyon) and J. R. Partington (Leeds))

References

- [1] I. CHALENDAR, E. A. GALLARDO-GUTIÉRREZ AND J. R. PARTINGTON, Weighted composition operators on the Dirichlet space: boundedness and spectral properties. *Math. Annalen* **363** (2015), n. 3-4, 1265–1279.
- [2] S. HYVÄRINEN, M. LINDSTRÖM, I. NIEMINEN AND E. SAUKKO, Spectra of weighted composition operators with automorphic symbols. *J. Funct. Anal.* **265**(8), 1749–1777, (2013).