

Spectrum and universality of weighted composition operators

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We are interested in a class of weighted composition operators $C_{\phi,\psi}$ on $L^2([0, 1])$. We prove that this type of operator can be expressed as a weighted bilateral shift on $\ell^2(\mathbb{Z}, L^2([a_0, \phi(a_0)]))$ for fixed $a_0 \in (0, 1)$. We will then define the notion of universality which is linked to the spectral properties of operators and conclude by discussing the universality of certain perturbations of $C_{\phi,\psi}$.