

p -hyponormality of weighted composition operators

Muneo Chō and Takeaki Yamazaki

Department of Mathematics, Kanagawa University, Yokohama, 221-8686, Japan
chiyom01@kanagawa-u.ac.jp (M. Chō), yamazt26@kanagawa-u.ac.jp (T. Yamazaki)

Let (X, \mathcal{F}, μ) be a σ -finite measure space. A measurable transformation $T : X \rightarrow X$ with $T^{-1}\mathcal{F} \subseteq \mathcal{F}$ and $\mu \circ T^{-1} \ll \mu$.

Definition. For a non negative $w \in L^\infty(X, \mathcal{F}, \mu)$, define the weighted composition operator C on $L^2(X, \mathcal{F}, \mu)$ as

$$Cf = wf \circ T \quad \text{for } f \in L^2(X, \mathcal{F}, \mu).$$

Especially, the case $w \equiv 1$, we call C a composition operator, simply.

In the case $h = \frac{d\mu \circ T^{-1}}{d\mu} \in L^\infty$, C is bounded.

In this talk, we shall obtain characterizations of p and ∞ -hyponormalities of weighted composition operators. They are extensions of the results by A. Lambert and C. Burnap-I.B. Jung-A. Lambert.