SUBNORMALITY VERSUS RESTRICTIONS

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Let S be a densely defined operator in a Hilbert space \( \mathcal{H} \) having invariant domain, that is, \( SD(S) \subset D(S) \). Set \( D_f := \{ p(S)f : p \in \mathbb{C}[z] \} \) and \( \mathcal{H}_f := \text{clo } D_f \). Apparently \( S_f := S|_{D_f} \) is densely defined in \( \mathcal{H}_f \).

QUESTION. Is \( S \) subnormal if so is \( S_f \) for any \( f \in D(S) \)?

References