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Weighted shifts induced by Hamburger moment sequences. Preliminary report.

We consider weighted shift operators on Hilbert space, and, weakening properties arising from positivity of Hankel moment matrices associated with k -hyponormality, subnormality, and Hausdorff moment sequences, consider some new properties $H(n)$ ($n = 1, 2, \dots$) and a Hamburger-type weighted shift which are associated with a Hamburger moment sequence. We discuss examples to show the various $H(n)$ are distinct; flatness, backward n -step extensions and perturbations of weighted shifts; and, given three initial weights $\alpha_0, \alpha_1, \alpha_2$ with $\alpha_0 \leq \alpha_2 < \alpha_1$, we produce a completion: a weighted shift of Hamburger-type but not subnormal, extending a (subnormal) completion by Stampfli in the case $\alpha_0 < \alpha_1 < \alpha_2$. (Received September 11, 2014)