**George R Exner\*** (`exner@bucknell.edu`), Department of Mathematics, Bucknell University, Lewisburg, PA 17837. *Backwards weighted shifts and n-contractivity.* Preliminary report.

A Hilbert space operator $T$ is $n$-contractive ($n = 1, 2, \ldots$) if $\sum_{i=0}^{n}(-1)^i C(n,i) T^{*i} T^i \geq 0$, where $C(n,i)$ is the usual binomial coefficient. We consider the adjoints $A_x^*$ of weighted shifts $A_x$ with weight sequence $\sqrt{\frac{1}{x}}, \sqrt{\frac{2}{x+1}}, \ldots$ for $x > 0$; the $A_m^*$ with $m$ integral and $m \geq 2$ were used by Agler as models for $n$-contractivity. We characterize when the Aluthge transform of $A_x^*$ is 2-contractive and give related results, and provide a condition sufficient for the compression of $A_x^*$ to a canonical co-invariant subspace of codimension $m$ to be $n$-contractive. (Received September 12, 2010)