1086-30-1233 **Tamas Forgacs*** (tforgacs@csufresno.edu) and **Andrzej Piotrowski**. *Reality of zeros of the coefficient polynomials of Hermite-diagonal operators.* Preliminary report.

Let $\{\gamma_k\}_{k=0}^{\infty}$ be a sequence of real numbers, let $\alpha > 0$ and let $T : \mathbb{R}[x] \to \mathbb{R}[x]$ be defined by $T[H_n^{(\alpha)}] = \gamma_n H_n^{(\alpha)}$ $(n = 0, 1, 2, \ldots)$, where $H_n^{(\alpha)}$ is the nth generalized Hermite polynomial. In this talk we show that in the representation $T = \sum T_k(x)D^k$ the T_ks must have only real zeros if $\{\gamma_k\}_{k=0}^{\infty}$ is an $H^{(\alpha)}$-multiplier sequence. We also discuss results supporting the best possible converse: if the T_ks have only real zeros and $\{\gamma_k\}_{k=0}^{\infty}$ is a classical multiplier sequence, then it is in fact an $H^{(\alpha)}$-multiplier sequence. (Received September 20, 2012)