1020-60-55 **Aurel Iulian Stan*** (`stan.7@osu.edu`), The Ohio State University, Marion, OH 43302. *Two inequalities for the norms of Wick products.* Preliminary report.

If X is a normally distributed random variable, and f and g polynomials, of degrees m and n, respectively, then the following inequality holds:

$$\| f(X) \diamond g(X) \| \leq \sqrt{\binom{m+n}{m}} \| f(X) \| \cdot \| g(X) \|,$$

where $\| \cdot \|$ denotes the L^2–norm, and $f(X) \diamond g(X)$ the Wick product of $f(X)$ and $g(X)$. We show that this inequality can be naturally extended to all random variables X, having finite moments of any order, whose Szegö–Jacobi sequence $\{\omega_n\}_{n \geq 1}$ is super-additive. On the other hand, if X is normally distributed, p, $q > 0$, such that $(1/p) + (1/q) = 1$, and f and g are two polynomials, then the following inequality holds:

$$\| f(X) \diamond g(X) \| \leq \| \Gamma(\sqrt{p} I) f(X) \| \cdot \| \Gamma(\sqrt{q} I) g(X) \|,$$

where $\Gamma(cI)$ denotes the second quantization operator of c times the identiy, for any complex number c. We prove that this inequality can be extended to all random variables X, whose Szegö–Jacobi sequence $\{\omega_n\}_{n \geq 1}$ is sub-additive. (Received August 08, 2006)