1030-42-203 **Ebner Pineda** (ebner.pineda@gmail.com), Universidad Centroccidental Lisandro Alvarado, Decanato de Ciencias y Tecnologia, Departamento de Matemáticas, Barquisimeto, Edo Lara, Venezuela, and **Wilfredo O Urbina*** (wilfredo.urbina@gmail.com), DePaul University, Department of Mathematical Sciences, 2320 North Kenmore Ave., Chicago, IL 60614. *On Besov-Lipschitz spaces for Hermite polynomial expasions for any $\alpha > 0$.*

We consider the Besov-Lipschitz spaces $B^{\alpha}_{p,q}(\gamma_d)$ for Hermite polynomial expasions for any $\alpha > 0$, defined as the set of functions $f \in L^p(\gamma_d)$ for which

$$\int_0^{\infty} (t^{k-\alpha} \left\| \frac{\partial^k u(\cdot,t)}{\partial t^k} \right\|_{p,\gamma_d})^q \frac{dt}{t} < \infty, \tag{1}$$

where k be the smallest integer greater than α and $1 < p, q < \infty$, $u(x,t) = P_t f(x)$ and $\{P_t\}_{t\geq 0}$ is the Poisson-Hermite semigroup,

In order to this definition makes sense it is needed to prove that if k, l integers greater than α, then

$$\|\frac{\partial^k u(\cdot,t)}{\partial t^k}\|_{p,\gamma} \leq A_k t^{-k+\alpha} \text{ if and only if } \|\frac{\partial^l u(\cdot,t)}{\partial t^l}\|_{p,\gamma} \leq A_l t^{-l+\alpha}.$$

Also we prove some inclusions among those spaces. (Received August 02, 2007)