1068-42-209 **A Eduardo Gatto** and **Ebner A Pineda*** (ebner.pineda@gmail.com), Residencias Oriente, Edificio Bolivar, Apartamento 8-4, Avenida Pedro Leon Torres, Barquisimeto, 3001, Venezuela, and **Wilfredo O Urbina**. *Riesz and Bessel Fractional Derivatives on function spaces for the Gaussian Measure.* Preliminary report.

Let $0 < \beta < 1$, the Riesz Fractional Derivative of order β, is defined by

$$D_\beta^\gamma f = \frac{1}{c_\beta}\int_0^\infty t^{-\beta-1}(P_t - I)\, f dt,$$

and the Bessel Fractional Derivative by

$$\mathcal{D}_\beta^\gamma f = \frac{1}{c_\beta}\int_0^\infty t^{-\beta-1}(e^{-t}P_t - I)\, f dt,$$

where $c_\beta = \displaystyle\int_0^\infty u^{-\beta-1}(e^{-u}-1)du < \infty$, since $0 < \beta < 1$.

For $\alpha \geq 0$, let k be the smallest integer greater than α and $1 \leq p, q < \infty$, the Gaussian Besov-Lipschitz space $B_{p,q}^\alpha(\gamma_d)$ is the set of functions $f \in L^p(\gamma_d)$ for which

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

and the Gaussian Triebel-Lizorkin space $F_{p,q}^\alpha(\gamma_d)$ is defined analogously. In this talk, we will prove the next results: Let $1 \leq p, q < +\infty$, $0 < \beta < \alpha < 1$ then D_β^γ and $\mathcal{D}_\beta^\gamma$ are bounded from $B_{p,q}^\alpha(\gamma_d)$ into $B_{p,q}^{\alpha-\beta}(\gamma_d)$ and also from $F_{p,q}^\alpha(\gamma_d)$ into $F_{p,q}^{\alpha-\beta}(\gamma_d)$. (Received January 18, 2011)