1086-28-952 **Dong Hyun Cho*** (j94385@kyonggi.ac.kr), Department of Mathematics, Kyonggi University, Youngtong-Gu, Suwon, Kyonggido 443-760, South Korea. *Relationships between the conditional Fourier-Feynman transform and convolution of unbounded functions on an analogue of wiener space.*

Let $C[0,t]$ denote the function space of all real-valued continuous paths on $[0,t]$. Define $X_n : C[0,t] \to \mathbb{R}^{n+1}$ and $X_{n+1} : C[0,t] \to \mathbb{R}^{n+2}$ by $X_n(x) = (x(t_0), x(t_1), \cdots, x(t_n))$ and $X_{n+1}(x) = (x(t_0), x(t_1), \cdots, x(t_n), x(t_{n+1}))$, where $0 = t_0 < t_1 < \cdots < t_n < t_{n+1} = t$. In the present talk, using simple formulas for the conditional expectations with the conditioning functions X_n and X_{n+1}, we evaluate the $L_p(1 \le p \le \infty)$-conditional analytic Fourier-Feynman transforms and the conditional convolution products of the functions which have the form

$$f_r((v_1, x), \cdots, (v_r, x)) \int_{L_2[0,t]} \exp\{i(v,x)\} d\sigma(v)$$

for $x \in C[0,t]$, where $\{v_1, \cdots, v_r\}$ is an orthonormal subset of $L_2[0,t]$, $f_r \in L_p(\mathbb{R}^r)(1 \le p \le \infty)$, and σ is the complex Borel measures of bounded variation on $L_2[0,t]$. We finally investigate several relationships between the conditional Fourier-Feynman transform and convolution of the functionals. (Received September 17, 2012)