1037-46-234 **Yuh-Jia Lee*** (yjlee@nuk.edu.tw), Department of Applied Mathematics, National University of Kaohsiung, Kaohsiung, 811, Taiwan. *A Characterization of Lévy white noise measure.*

Let β be a positive finite measure on $(\mathbb{R}, \mathcal{B}(\mathbb{R}))$. For a Fréchet differentiable function φ on $\mathcal{S}'$, define $\partial_\eta \varphi$ as follows:

$$\partial_\eta \varphi(x) = \iint_{\mathbb{R}^2_*} \eta(t) \, \frac{\varphi(x + u\delta_t) - \varphi(x)}{u} \, \lambda(dt, du) + \sigma^2 \int_{-\infty}^{+\infty} \eta(t) \, D_{\delta_t} \varphi(x) \, dt,$$

where $\mathbb{R}^2_* = \{(t,u) \in \mathbb{R}^2 : |u| > 0\}$, $\sigma^2 = \beta(\{0\})$ and $\lambda(dt, du) = (1 + u^2)\, \beta(du) dt$. Assume that β has finite second moment and there is a real constant τ such that for any functional φ in the algebra generated by $\{e^{\mathrm{i}(\cdot,\eta)} : \eta \in \mathcal{S}\}$, the following equality holds:

$$\int_{\mathcal{S}'} \Big((x,\, \zeta) - \tau \int_{-\infty}^{+\infty} \zeta(t)\, dt \Big) \varphi(x) \, \Lambda(dx) = \int_{\mathcal{S}'} \partial_\zeta \, \varphi(x) \, \Lambda(dx), \quad \zeta \in \mathcal{S}. \tag{1}$$

It is shown that Λ is the Lévy white noise measure associated with the pair (μ, β), where

$$\mu = \tau - \int_{-\infty}^{+\infty} u \, \beta(du).$$

Coversely if Λ is the Lévy white noiose measure on $\mathcal{S}'$ then (1) holds. (Received February 04, 2008)