

Let X denote a pure-jump one-dimensional Lévy process with characteristic triple $(\gamma, 0, \nu)$. Then $(X, [X, X])$ is a bi-variate Lévy process with

$$\log \mathbb{E}(e^{iuX_t - q[X, X]_t}) = t(iu\gamma + \int_{-\infty}^{\infty} (e^{iux - qx^2} - 1 - iux1_{|x| \leq 1})\nu(x)dx) \quad (1)$$

for $u \in \mathbb{R}, q \geq 0$.