



Lévy-Khintchine representation

Let X be an infinitely divisible (ID) random vector in \mathbb{R}^d . Then there exist a unique triplet (b, Σ, ν) such that

$$\mathbb{E}[e^{i\langle x, X \rangle}] = \exp\left(i\langle b, x \rangle - \frac{1}{2}x^T \Sigma x - \int_{\mathbb{R}^d} (e^{i\langle x, y \rangle} - 1 - i\langle x, y \rangle) \nu(dy)\right)$$

where $b \in \mathbb{R}^d$, Σ is a nonnegative definite $d \times d$ matrix, and ν is a measure on \mathbb{R}^d with $\nu(\{0\}) = 0$ and $\int_{\mathbb{R}^d} (\|y\|^2 \wedge 1) \nu(dy) < \infty$. The measure ν is called the Lévy measure of X .

It has been shown that in Basilek et al. [1] that supermodular ordering of two Lévy processes is equivalent to the supermodular ordering of their Lévy measures.



Topic	Speaker
Introduction	Dr. [Name]
Methodology	Dr. [Name]
Results	Dr. [Name]
Conclusion	Dr. [Name]

- This is a joint work with:
 - Ken Sakai (UC)
 - Ken Thery (2011)
 - Nicolas Karpuz (Imperial College London)
- There is an arXiv preprint:
 - Sakai, Karpuz & Thery (2014). On the covering of various sequential Wasserstein metrics

Handwritten notes on a whiteboard, including the word "covering" and some mathematical symbols.





- A variety of heuristic reasons for considering the model, see [van de Geer et al. \(2012\)](#) for details.
- We take a Bayesian perspective: set $\theta = (\mu, \Sigma, \rho, \alpha, \beta, \gamma)$ and θ^* integrated variables, \mathcal{Z} increments of Σ , the posterior density given observations y, x, z is: $\text{Pr}(\theta | y, x, z) \propto \mathcal{Z}(\theta, y, x, z)$
- Posterior is not known up to a constant, but, one can construct an auxiliary density which closely approximates it and sample from it; that a correction for importance sampling is possible.

