PROBABILITY
AND
MATHEMATICAL STATISTICS
Vol. 33, Fasc. 2 (2013), pp. 201–212

CONVERGENCE OF THE FOURTH MOMENT AND INFINITE DIVISIBILITY

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Abstract: In this note we prove that, for infinitely divisible laws, convergence of the fourth moment to 3 is sufficient to ensure convergence in law to the Gaussian distribution. Our results include infinitely divisible measures with respect to classical, free, Boolean and monotone convolution. A similar criterion is proved for compound Poissons with jump distribution supported on a finite number of atoms. In particular, this generalizes recent results of Nourdin and Poly (2012).

2000 AMS Mathematics Subject Classification: Primary: 46L54; Secondary: 60E07.

Keywords and phrases: Bercovici–Pata bijections, Boolean convolution, free convolution, monotone convolution, infinite divisibility.