

On the compound Poisson approximation for convolutions of probability measures

Tuesday, September 18, 2018 1:00 PM (50 minutes)

We consider the approximation of a convolution of possibly different probability measures by a compound Poisson distribution and also by related signed measures of higher order. We present new total variation bounds having a better structure than those from the literature. A numerical example illustrates the usefulness of the bounds. The proofs use arguments from [1] and [2] in combination with new smoothness inequalities, which could be of independent interest. The talk is based on [3].

References:

- [1] Kerstan, J. (1964). Verallgemeinerung eines Satzes von Prochorow und Le Cam, Z. Wahrscheinlichkeitstheorie und Verw. Gebiete, 2, 173-179.
- [2] Roos, B. (1999). On the rate of multivariate Poisson convergence. J. Multivariate Anal., 69, 120-134.
- [3] Roos, B. (2017). Refined total variation bounds in the multivariate and compound Poisson approximation. ALEA, Lat. Am. J. Probab. Math. Stat. 14, 337-360.

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