

# A kernel type nonparametric density estimator for decompounding

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## ABSTRACT

Given a sample from a discretely observed compound Poisson process, used for instance in Insurance Mathematics to model time and size of incoming claims, we consider estimation of the density of the claim sizes. We propose a kernel type nonparametric density estimator and study its asymptotic properties. An order bound for the bias and an asymptotic expansion of the variance of the estimator are given. Pointwise weak consistency and asymptotic normality are established. The results show that asymptotically the estimator behaves very much like an ordinary kernel estimator.

## References

- [1] Van Es B., S. Gugushvili and P. Spreij, *A kernel type nonparametric density estimator for decompounding*, arXiv:math/0505355.
- [2] Van Es B., S. Gugushvili and P. Spreij, *A kernel type nonparametric density estimator for decompounding*, forthcoming in Bernoulli .