

The normal approximation of compound Hawkes functionals

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We derive quantitative bounds in the Wasserstein distance for the approximation of stochastic integrals of deterministic and non-negative integrands with respect to Hawkes processes by a normally distributed random variable. Our results are specifically applied to compound Hawkes processes, and improve on the current literature where estimates may not converge to zero in large time, or have been obtained only for specific kernels such as the exponential or Erlang functions.