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ASYMPTOTIC DISTRIBUTIONS AND BERRY–ESSEEN INEQUALITIES FOR LOTKA–NAGAEV ESTIMATOR OF A POISSON RANDOMLY INDEXED BRANCHING PROCESS

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Abstract. Consider a Galton–Watson process $\{Z_n\}$, the Lotka–Negaev estimator for offspring mean m is $R_n = Z_{n+1}/Z_n$. Let N_t be a Poisson process independent of $\{Z_n\}$, the continuous time process $\{Z_{N_t}\}$ is a Poisson randomly indexed branching process. We show the asymptotic distributions for $\{\mathbb{R}_t := R_{N_t}\}$.

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