

## KERNEL ESTIMATION FOR STATIONARY DENSITY OF MARKOV CHAINS WITH GENERAL STATE SPACE

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**Abstract.** Let  $\{X_n\}_{n \geq 0}$  be a Markov chain with stationary distribution  $f(x)\nu(dx)$ ,  $\nu$  being a  $\sigma$ -finite measure on  $E \subset R^d$ . Under strict stationarity and mixing conditions we obtain the consistency and asymptotic normality for a general class of kernel estimates of  $f(\cdot)$ . When the assumption of stationarity is dropped these results are extended to geometrically ergodic chains.

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