

EFFECT OF THE INITIAL ESTIMATOR ON THE ASYMPTOTIC BEHAVIOR OF ONE-STEP M -ESTIMATOR

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Abstract. For a general (real) parameter, let M_n be the M -estimator and $M_n^{(1)}$ be its one-step version (based on a suitable initial estimator $M_n^{(0)}$). It is known that, under certain regularity conditions, $n(M_n^{(1)} - M_n) = O_p(1)$. The asymptotic distribution of $n(M_n^{(1)} - M_n)$ is studied; it is typically non-normal and it reveals the role of the initial estimator $M_n^{(0)}$.

Key words and phrases: Influence function, M -estimator, one-step version of M -estimator, random change of time, score function, weak convergence of M -processes.