SECOND ORDER ASYMPTOTIC OPTIMALITY OF ESTIMATORS FOR A DENSITY WITH FINITE CUSPS

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Abstract. We consider i.i.d. samples from a continuous density with finite cusps. Then we obtain the bound for the second order asymptotic distribution of all asymptotically median unbiased estimators. Further we get the second order asymptotic distribution of a bias-adjusted maximum likelihood estimator, and we see that it is not generally second order asymptotically efficient.

Key words and phrases: Second order asymptotically median unbiased estimator, second order asymptotic distribution, Edgeworth expansion, maximum likelihood estimator.