

Loss of information of a statistic for a family of non-regular distributions, II: more general case

Masafumi Akahira · Hyo Gyeong Kim ·
Nao Ohyauchi

Received: 15 November 2010 / Revised: 22 June 2011 / Published online: 23 December 2011
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Abstract In the paper of Akahira (Ann Inst Statist Math 48:349–364, 1996), it was shown that the second order asymptotic loss of information in reducing to a statistic consisting of extreme values and an asymptotically ancillary statistic vanished for a family of non-regular distributions whose densities have the same values and the sum of differential coefficients at the endpoints of the bounded support is equal to zero. In this paper, the result can be shown to be extended to the case of a family of non-regular distributions without the above restriction.

Keywords Rényi measure · Loss of information · Non-regular case · Extreme statistics · Asymptotically ancillary statistic · Truncated distributions