ESTIMATION OF A COMMON MEAN OF SEVERAL UNIVARIATE INVERSE GAUSSIAN POPULATIONS

MANZOOR AHMAD[1], Y. P. CHAUBEY[2]* AND B. K. SINHA[3]

[1] *Department de Mathematique et Informatique, Université du Québec à Montréal, CP 8888, Suc. A, Montreal, Quebec, Canada H3C 3P8*
[2] *Department of Mathematics, Concordia University, Montreal, Quebec, Canada H3G 1M8*
[3] *Department of Mathematics and Statistics, The University of Maryland, Baltimore, MD 21228, U.S.A.*

(Received July 1, 1989; revised April 2, 1990)

Abstract. The problem of estimating the common mean μ of k independent and univariate inverse Gaussian populations $IG(\mu, \lambda_i)$, $i = 1, \ldots, k$ with unknown and unequal λ's is considered. The difficulty with the maximum likelihood estimator of μ is pointed out, and a natural estimator $\tilde{\mu}$ of μ along the lines of Graybill and Deal is proposed. Various finite sample properties and some decision-theoretic properties of $\tilde{\mu}$ are discussed.

Key words and phrases: Inverse-Gaussian population, Graybill-Deal type estimate, squared error loss, equivariant estimator, admissibility.