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MULTIVARIATE SYMMETRY VIA PROJECTION PURSUIT

DAVID K. BLOUGH

Department of Agricultural Economics, University of Arizona, Tucson, AZ 85721, U.S.A.

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Abstract. Blough (1985, *Ann. Inst. Statist. Math.*, **37**, 545–555) developed a multivariate location region for a random p-vector $\boldsymbol{X}$. The dimension of this region provides information on the degree of symmetry possessed by the distribution of $\boldsymbol{X}$. By considering all one-dimensional projections of $\boldsymbol{X}$, it is possible to ascertain the dimension of the location region. Projection pursuit techniques can therefore be used to study symmetry in multivariate data sets. An example from an Entomology investigation is presented illustrating these methods.

Key words and phrases: Multivariate symmetry, location region, projection pursuit.