Principal Axis Analysis

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Abstract

Principal axis analysis rotates standardised principal components to optimally detect subgroup structure, rotation being based on preferred directions in the spherised data. As such, it is a computationally efficient method of exploratory data analysis, particularly well-suited to detecting mixtures of elliptically contoured distributions. The ability of principal components itself to perform as a cluster analysis method on some occasions, but not others, is explained and illustrated. Links with a number of related multivariate methods are explored. Examples are given throughout. Further developments are briefly indicated.