4.5 ICA and Projection Pursuit

It is interesting to note how our approach to ICA makes explicit the connection between ICA and projection pursuit. Projection pursuit (Friedman and Tukey, 1974; Friedman, 1987; Huber, 1985; Jones and Sibson, 1987) is a technique developed in statistics for finding "interesting" projections of multidimensional data. Such projections can then be used for optimal visualization of the data, and for such purposes as density estimation and regression. In basic (1-D) projection pursuit, we try to find directions such that the projections of the data in those directions have interesting distributions, i.e., display some structure. It has been argued by Huber (Huber, 1985) and by Jones and Sibson (Jones and Sibson, 1987) that the Gaussian distribution is the least interesting one, and that the most