

Third and fourth cumulants in search of independent components

Hannu Oja

University of Turku, Finland

We assume that the components of the observed random vector are linear combinations of latent mutually independent, gaussian and non-gaussian, components. We further assume that the non-gaussian components present the information and the gaussian components are seen as a noise. Projection pursuit with a convex combination of squared third and fourth cumulants as a projection index is used to find the non-gaussian independent components and the corresponding signal subspace. The properties of the resulting unmixing matrix and subspace estimates are considered in detail through corresponding optimization problems, estimating equations, algorithms and asymptotic properties.

This is joint work with Joni Virta and Klaus Nordhausen.