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Multidimensional two components Gaussian mixture detection

jeudi 21 juin 2018 12:00 (30 minutes)

We consider a d-dimensional i.i.d sample from a distribution with unknown density f. The problem of detection of a two-component mixture is considered. Our aim is to decide whether f is the density of a standard Gaussian random d-vector ($f = \phi_d$) against f is a two-component mixture: $f = (1-\varepsilon)\phi_d + \varepsilon\phi_d(.-\mu)$ where (ε, μ) are unknown parameters. Optimal separation conditions on ε, μ, n and the dimension d are established, allowing to separate both hypotheses with prescribed errors. Several testing procedures are proposed and two alternative subsets are considered.

Work in collaboration with C. Marteau (ICJ) and Cathy Maugis-Rabusseau (IMT/INSA)

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Classification de Session: Theory around mixtures