Bandwidth choice for multivariate kernel density estimation

by Eva Herrmann, Darmstadt University of Technology, Germany

This talk handles the problem of smoothing parameter selection for multivariate kernel density estimation in small dimensions with a special focus on bivariate and trivariate kernel density estimation.

A specific iterative plug-in type algorithm for automatic choice of a bandwidth matrix will be presented and analyzed with respect to several aspects. Strong consistency results will be sketched and accompanied by simulations in order to demonstrate that this algorithm is applicable even for only moderate sample size. Finally, an application of data-adaptive bivariate and trivariate kernel density estimation to a real data set is presented.