Consistent Estimate of Components in an Additive ANOVA Model with Sparse Data *

陳　宏

國立台灣大學數學系

Abstract

Motivated by ``local normalization'' to remove bias in the observed intensity levels of gene expressions measured in microarray study, we consider a sparse two-way additive ANOVA model in which the number of columns, G, is much larger than the number of rows, N. Moreover, the number of observations, I, fall in each column is much smaller than the number of rows. An asymptotic analysis is used to illustrate that G/N^2 goes to infinity is a necessary and sufficient condition to getting consistent estimates of row effects and unbiased estimates of column effects as N goes to infinity when I is fixed.