MODEL SELECTION IN CHANGE-POINT LIKE PROBLEMS VIA A MODIFIED BAYES INFORMATION CRITERION: APPLICATIONS TO ARRAY CGH AND GENE MAPPING

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Although the Bayes Information Criterion (BIC) has been suggested for model selection in change-point like problems, the assumptions underlying the derivation of the criterion are not applicable because of lack of differentiability of the likelihood function. Here we review the classical BIC argument and derive modifications that are suitable for certain classes of these problems. Applications to array CGH data, which segment a genome according to DNA copy number, and to model selection in genome scans to map quantitative trait loci are discussed. This is joint research with N. Zhang and J. Shi.