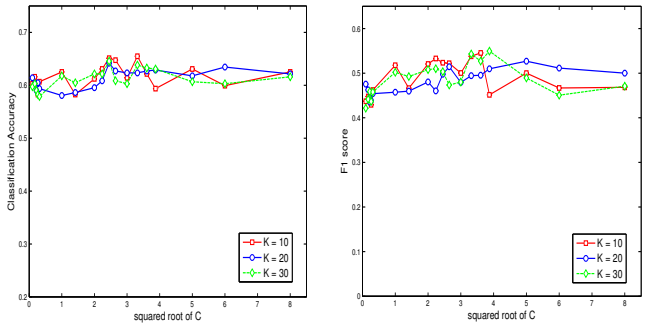
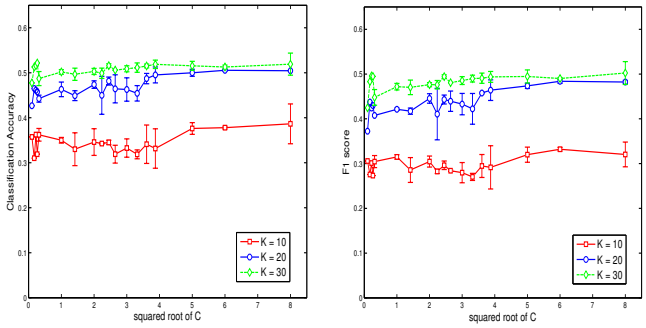
APPENDIX

In this section, we provide additional experimental results to analyze the sensitivity of MMH with respect to the regularization parameter C. We note that the similar analysis has been provided in [10]. Fig. 11 and Fig. 12 show the sensitivity on the TRECVID 2003 and Flickr data set respectively. For each data set, we present the performance for three MMH models, with the latent feature number being $K = 10$, $K = 20$, and $K = 30$.



(a) Accuracy (b) F1

Fig. 11. Sensitivity analysis to C on the TRECVID data set.



(a) Accuracy (b) F1

Fig. 12. Sensitivity analysis to C on the Flickr data set.

From Fig. 11 and Fig. 12, we can see that on both data sets, MMH has the similar sensitivity against C, namely, C affects the performance and it is relatively stable in some ranges. In order to get good performance, we still need to do cross-validation to select a good C, similar as in iMMH. We can also observe that the performance of MMH changes a lot when using different number of latent features. As shown in Fig. 11, it is not necessarily true that increasing K will improve the performance. Thus, we need a sophisticated method to select the proper value of K. Our nonparametric techniques provide one attempt to address this model selection problem.