# Application of Spatial Data Fusion in Classification Accuracy Improvement

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Proposing a fuzzy geostatistical approach incorporated to the Bayesian data fusion technique for supervised classification of multi-sensor data has some advantages. The classification based only on the traditional spectral approach cannot preserve the accurate spatial information and can result in unrealistic classification results. To obtain accurate spatial/contextual information, the indicator kriging that allows one to estimate the probability of occurrence of certain classes on the basis of surrounding pixel information is incorporated into the Bayesian framework. This new approach has its merit incorporating both the spectral information and spatial information and improves the confidence level in the final data fusion task. To illustrate the proposed scheme, supervised classification of multi-sensor test data can be carried out and then analysis of the results must indicates that the proposed method will considerably improve the classification accuracy, compared to the methods based on the spectral information alone according to previous studies. In this study Ikonos image of Tehran composed to Landsat image and results show better accuracy in classification.