Category decomposition based on sub-space method with learning process

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A method for category decomposition of Earth observation satellite images by learning subspace method is proposed. The typical distribution of the feature vectors is biased in the feature space so that such nature has to be used for category decomposition. The idea is to use the nature set in a subspace for feature space during category decomposition, only one single subspace is used. A large amount of data is omitted during the learning process in the subspace method. As the results from the experiments with real hyper spectral imagery data, it is found that the proposed category decomposition is superior to the existing method in terms of decomposition accuracy and the required process time for the decompositions.