MULTITEMPORAL IMAGE CLASSIFICATION WITH AUTOMATIC BUILDING OF TREE−STRUCTURED MRF MODELS (WedPmPO2)

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Abstract :

In this work we deal with the classification of remote−sensing images following a statistical approach. To take into account prior information on the class of images of interest we model the image as a tree−structured Markov random field (TS−MRF), so as to fit the intrinsic structure of the data. TS−MRF models are defined recursively and, as such, lead to the formulation and solution of the segmentation task as a recursive problem, so that the original K−ary segmentation is decomposed into a sequence of reduced−dimensionality steps, and hence to a much simpler and more manageable segmentation. Here, we propose a method to build automatically the underlying tree structure of the model, based on a metric which compares class features in order to establish the hierarchical relationships among classes, and apply the technique to the segmentation of multitemporal remote−sensing images.

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