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J. A. Richards

D. A. Landgrebe

P. H. Swain

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QUANTITATIVE USE OF ANCILLARY DATA IN PIXEL LABELING

J. A. RICHARDS
University of New South Wales, Australia

D. A. LANDGREBE AND P. H. SWAIN
Purdue University/LARS

Ancillary data such as elevation, slope, rainfall, crop planting date, etc., have been recognized for some time as containing useful information for improving data analysis accuracy. However, means for incorporating data of this sort into the analysis process have seen only limited development. For example, ancillary data have been used in a more or less subjective manner in the class definition and training process and in partitioning class sets into mutually exclusive subsets. The purpose of the work reported here is to find more objective and quantitative means for using this ancillary information.

Relaxation techniques are a class of iterative procedures under study in the field of picture processing wherein they show promise for reducing ambiguity in scene labeling by developing spatial context.

In this paper initial results are presented to show how relaxation techniques can be adapted to the pixel labeling problem to utilize ancillary data in a quantitative and objective fashion. The technique is highlighted by a forestry example in which elevation is used as ancillary data to improve the accuracy of an existing classification of cover types.