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STATISTICAL ANALYSIS OF TEXTURE IN

LANDSAT IMAGES OF THE UNITED KINGDOM

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ABSTRACT

The agricultural regions of England appear in LANDSAT IMAGES as extended mosaic patterns of small fields. Individual fields, especially in the hillier north and west of the country may be as small as a few pixels and thus it is the field patterns themselves which make up the texture of the image. We have been concerned with the problem of mapping the average orientation of fields (a secondary indicator for geomorphology) and the distribution of field size.

Two approaches are being used:

(i) Holographic derivation of local autocorrelation information.

(ii) Digital extraction of statistical parameters.

For our test area in East Cornwall we have compared optically and digitally derived autocorrelation functions. We have also studied the local stationarity of the first and second order statistical measures which is crucial when evaluating statistical classification strategies.

A REAL TIME FREEZE PREDICTION MODEL BASED

UPON REMOTELY SENSED SURFACE TEMPERATURES

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ABSTRACT

A mathematical model based on a numerical solution to the earth-air interface energy flux density equation is described. The model uses synoptic information, real time satellite data and standard meteorological measurements at key locations to produce short-range air and surface temperature predictions for the Florida peninsula during critical freeze nights. A statistical approach is then used to produce a detailed lattice of temperatures with the values from the key locations. The lattice of values is used to produce a thermal map of the Florida peninsula that is displayed on a television screen in a format identical to that used presently to display the satellite thermal data. The work stems from a cooperative project with NOAA, NASA and the University of Florida, to improve freeze forecasts.

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