

A survey on edge detection algorithms applied on aerospatial images

Elisabeta Antonia HALLER*

October, 2011

Abstract

Low-level features are used to extract basic features from images without information about spatial relationships. Some image interpretations are based on edge detection, as a primary way of analysis. By emphasise the boundries, the features became more clearly and easy to analyze.

2010 Mathematics Subject Classification: Primary 62H35;
Secondary 68U10.

Key words and phrases: image segmentation, gradient operator, frequency domain, low-level features, high-pass Fourier filter

1 Image segmentation

Image segmentation assume image partitioning in homogeneous areas. The pixels form a particular region must have identical attributes and properties. An image would have sets of region which are connecting and is nonoverlapping. [1]

If we have an image R , the segmentaion process is complete if we can identify a finite number of regions (R_1, R_2, \dots, R_n) with below properties:

1. $R = R_1 \cup R_2 \cup \dots \cup R_n$
2. $R_i \cap R_j = \emptyset, \forall i \neq j$

*"Mircea cel Bătrân" National College, Rm. Vâlcea, antonia_haller@yahoo.com