AUTOMATIC BUILDING EXTRACTION FROM HIGH RESOLUTION IMAGES USING ACTIVE CONTOURS AND SHAPE PRIOR KNOWLEDGE

D. Yari[a] M. Mokhtarzadeh[a] H. Ebadi[a] S. Ahmadi[*a]

[a] K.N Toosi university of technology, Faculty of Geodesy & Geomatic,
Valiasr st. cross Mirdamad st., 1996715433, Tehran, Islamic Republic of Iran

Technical Commission VII Symposium 2010

KEY WORDS: Photogrammetry, Extraction, Building, Image, Knowledge Base

ABSTRACT:

Snake, or active contours, are curves defined within an image domain that can move under the influence of internal force within the curve include tension and curvature, and external force derived from the image data or may be specified by a supervising process or a human user. Extraction of object boundaries is a goal of Image processing, computer vision and digital photogrammetry. Active contours provide a unique and powerful approach to this end. In this paper, we proposed a method that extracts boundaries of objects with a specific shape like a rectangle. The model is suitable to extract building boundaries from aerial and satellite images. To obtain this end, we have added an external energy to the Snake model which after minimizing Snake energy functional, the curve is fitted to building boundaries that have the prior shapes.

TOPIC: Image processing and pattern recognition
ALTERNATIVE TOPIC: Geometric modeling