Introduction

• Snakes and dynamic programming have been widely applied for image analysis tasks as feature extraction
• Snakes and/or DP have being used to develop methods for feature extraction as buildings and roads, which are that basic features for mapping applications
  – GIS building and maintenance
  – Urban modeling
  – Surface representation
  – ...
Method overview

- A snake energy function is used to represent a building roof contour in the digital image reference system

\[ E_2(v) = \sum_{i=1}^{n} \left[ \alpha_i |v_{i+1} - v_i|^2 + \beta_i |v_{i+1} - 2v_i + v_{i-1}|^2 + \gamma_i |\nabla G(x_i, y_i)|^2 \right] \]

- Solution is found by using the dynamic programming optimization technique

Method flowchart

1. Aerial image
2. Approximate building roof contour measurement
3. Building roof contours extraction
   - Snakes energy function solved by dynamic programming
4. Building roof contours represented as polygons
Acknowledgements

For your attention!

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