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## BUILDING ROOF CONTOURS EXTRACTION FROM AERIAL IMAGERY BASED ON SNAKES AND DYNAMIC PROGRAMMING

Antonio Juliano Fazan  
Aluir Porfírio Dal Poz  
Cartographic Sciences Graduate Program  
University of São Paulo State – Brazil

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## 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
  - ...

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## Method overview

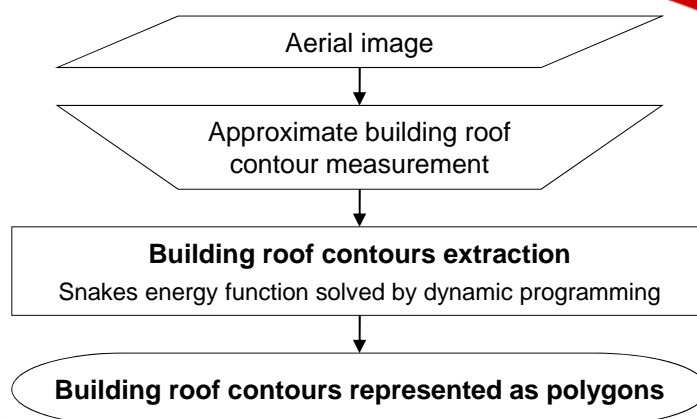
- A snake energy function is used to represent a building roof contour in the digital image reference system

$$E_2(v) = \sum_{i=0}^{n-1} \left( \alpha_i |v_{i+1} - v_i|^2 + \beta_i |v_{i-1} - 2v_i + v_{i+1}|^2 + \gamma_i |VG(x_i, y_i)|^2 \right)$$

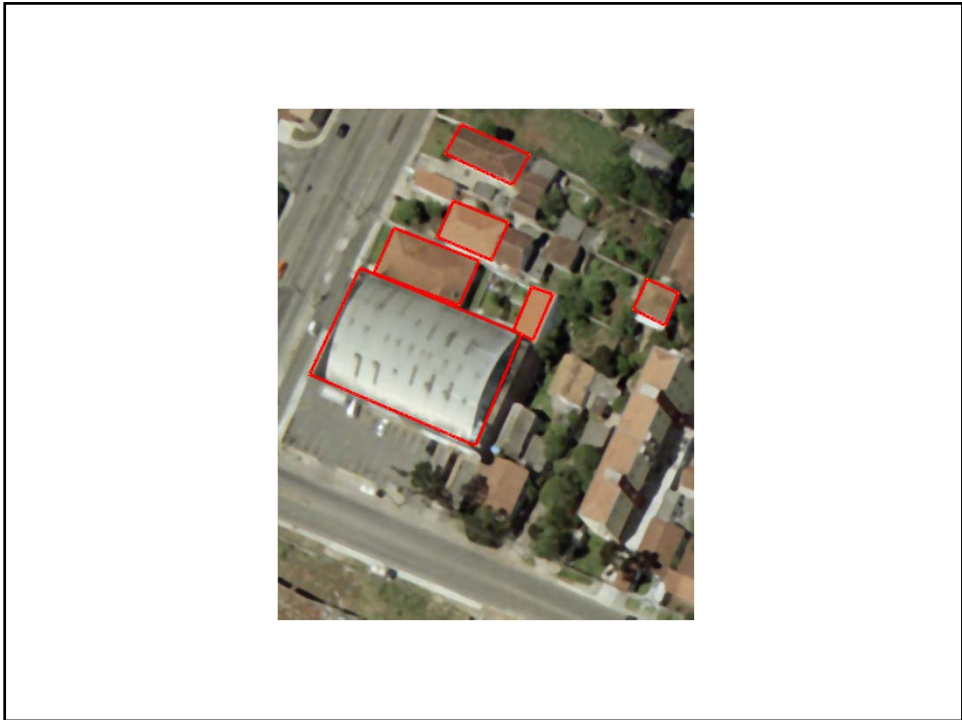
$$v_i = [x_i \quad y_i]$$

- Solution is found by using the dynamic programming optimization technique

## Method flowchart



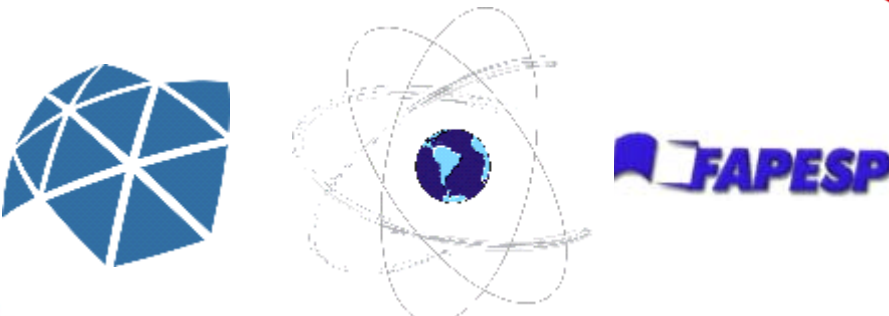






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# Acknowledgements



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