

# **On the Design of Vision-Based Optimal Forest Inventory Systems using Airborne Data**

*Terry Caelli<sup>1</sup>*

<sup>1</sup>National ICT Australia  
Autonomous Systems and Sensing Technology  
Canberra, Australia  
Email: tcaelli@rsise.anu.edu.au

**Presented at SIRC 2005 – The 17<sup>th</sup> Annual Colloquium of the Spatial Information Research Centre  
University of Otago, Dunedin, New Zealand  
November 24<sup>th</sup>-25<sup>th</sup> 2005**

## **KEYNOTE ABSTRACT**

In this talk we consider an integrated Bayesian approach to the prediction of tree stands and forestry inventory information from airborne image data. Of particular interest is the interplay between three basic components of the system: image segmentation/annotation, stereo imagery and 3D tree model projections in order to optimize the interpretation procedure used to extract forestry inventory information. Results with synthetic and boreal forestry image data from Alberta, Canada, demonstrate the potential of this type of approach..

***Keywords and phrases:*** Bayesian, airborne data, forestry, image segmentation