# Student project

Key Topics:

- fire [1]
- modelling [2]

Modelling forest fuel temporal change using LiDAR [3]
The primary option available to reduce fire risks to the community and the environment is through reducing fuel through fuel reduction burns. The development of accurate and reliable methods to quantify forest fuel characteristics and to understand forest fuel change over time is an ongoing requirement due to the continual need for improvement in fire resource management, bushfire suppression, and in framing bushfire related policies. This study used LiDAR to measure landscape-scale forest fuels in order to generate a time effective, feasible and objective method for forest fuel hazard assessment. This study was completed in January 2017.

Research team

Student researcher

[4]
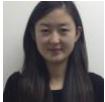
Dr Yang Chen
[4]
RESEARCH LEADER

CSIRO

[5]

Full description

LiDAR based technology is proposed as a means to measure landscape-scale forest fuels in order to generate a time effective, cheap and objective method for forest fuel hazard assessment. The technique was tested at sites of different vegetation ages, since fire, in southeastern Australia to extract accurate information about forest fuel structures and assess forest fuel hazards. It also assessed how the other environmental factors impact on the hazards.

This project was completed in January 2017.

Related News

20 OCT 2017

Congratulations to PhDs
POLICY, REMOTE SENSING

[6]

New online - September 2017
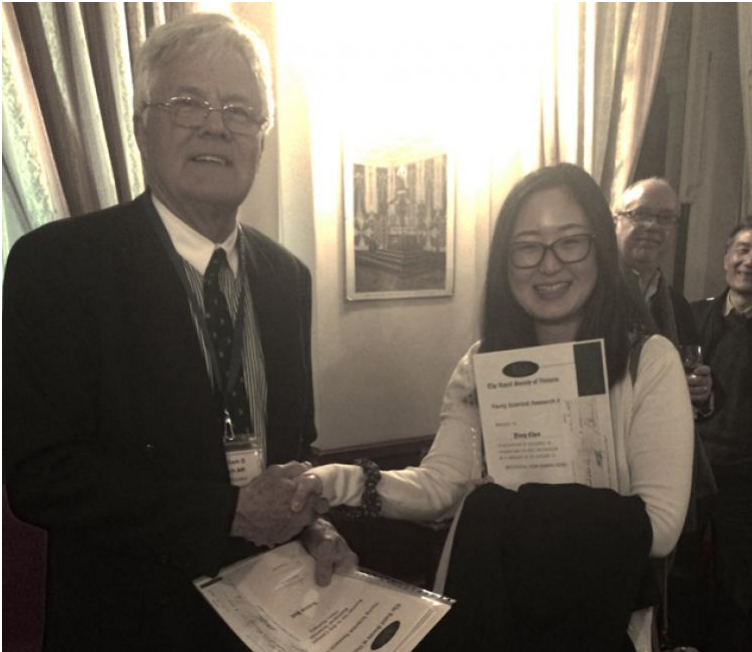
New online - December 2016

EMERGENCY MANAGEMENT, LAND MANAGEMENT

CRC student wins best paper award
FIRE, FIRE IMPACTS

[9]

Royal award for forest student
FIRE, FIRE IMPACTS

[10]

Publications

Year	Type	Citation
2017	Conference Paper	Chen, Y. [4], Zhou, X. [11], Yebra, M. [12], Harris, S. [13] & Tapper, N. [14] **Estimation of forest surface fuel load using airborne LiDAR data** [15]. *SPIE Remote Sensing* (SPIE, 2017). Google Schola
2017	Journal Article	Chen, Y. [4], Zhou, X. [11], Yebra, M. [12], Harris, S. [13] & Tapper, N. [14] **Development of a predictive model for estimating forest surface fuel load in Australian eucalypt forests with LiDAR da**
2017	Thesis	Chen, Y. [4] **LiDAR Application in Forest Fuel Measurements for Bushfire Hazard Mitigation** [24]. *School of Earth, Atmosphere and Environment, Faculty of Science* **Doctor of Philosophy,** 134 (20

Resources

DATE [28]	TITLE [29]	DOWNLOAD	KEY TOPICS
07 Jul 2015	Yang Chen PhD Progress Report 2015 [30]	65.17 KB	[31] (65.17 KB)
24 Oct 2016	Forest fuel structural measurement and fuel load estimation using LiDAR data [32]	660.29 KB	[33] (660.29 KB)[1], fuel reduction [34], modelling [2]

Posters

16 AUG 2015

[35]
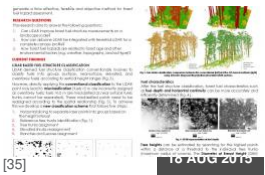
Modelling Forest Fuel Temporal Change Using LiDAR

[35]

FIRE [1], **MODELLING** [2]

The primary option available to reduce fire risks to the community and the environment is through a...

12 AUG 2016

[36]

Estimation of forest litter-bed fuel load using airborne LiDAR data

[36]

FIRE

FIRE [1], **IMPACTS** [37]

This study is using LiDAR to measure landscape-scale forest fuels in order to generate a time effective,...

Linked Projects

Mapping bushfire hazard and impacts
[38]

BUSHFIRE PREDICTIVE SERVICES [39]

A/Prof Marta Yebra
Australian National University [40]

[40]

Links
[1] https://www.bnhcrc.com.au/research/topics/fire [2] https://www.bnhcrc.com.au/research/topics/modelling [3] https://www.bnhcrc.com.au/research/understanding-and-mitigating-hazards/1576 [4]
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