

# Spot-fire Project: research and utilisation

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Jason J. Sharples <sup>a,e</sup> , James E. Hilton <sup>b,e</sup> , Andrew L. Sullivan <sup>c,e</sup> (Research Team)

Stuart Matthews <sup>d,e</sup> (End User Representative)

<sup>a</sup> University of New South Wales

<sup>b</sup> CSIRO Data 61

<sup>c</sup> CSIRO Land and Water

<sup>d</sup> New South Wales Rural Fire Service

<sup>e</sup> Bushfire and Natural Hazards CRC

I couldn't find a good enough picture to put here...

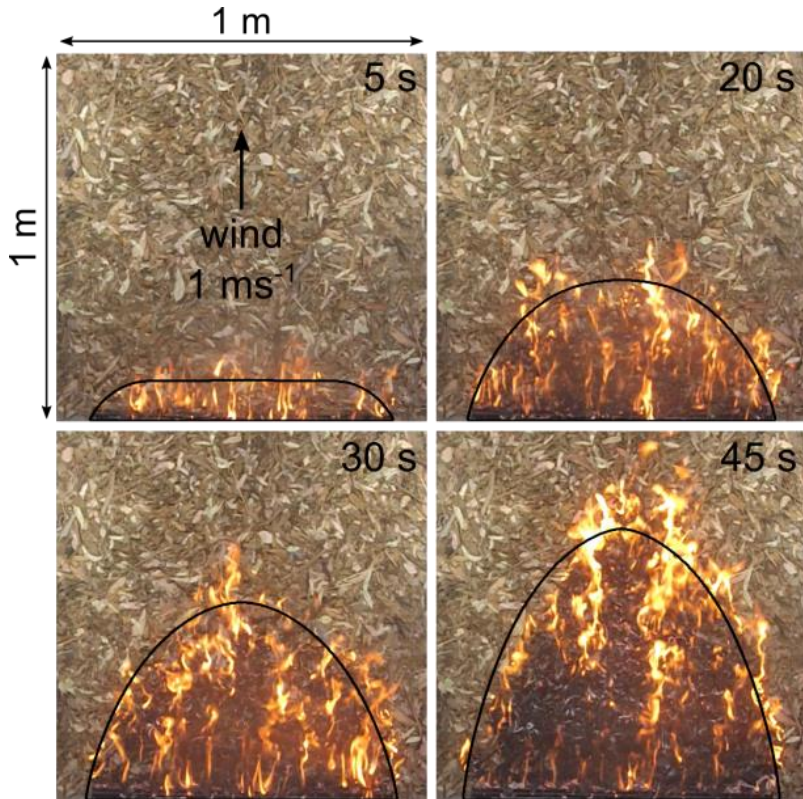


**Business**  
Cooperative Research  
Centres Programme

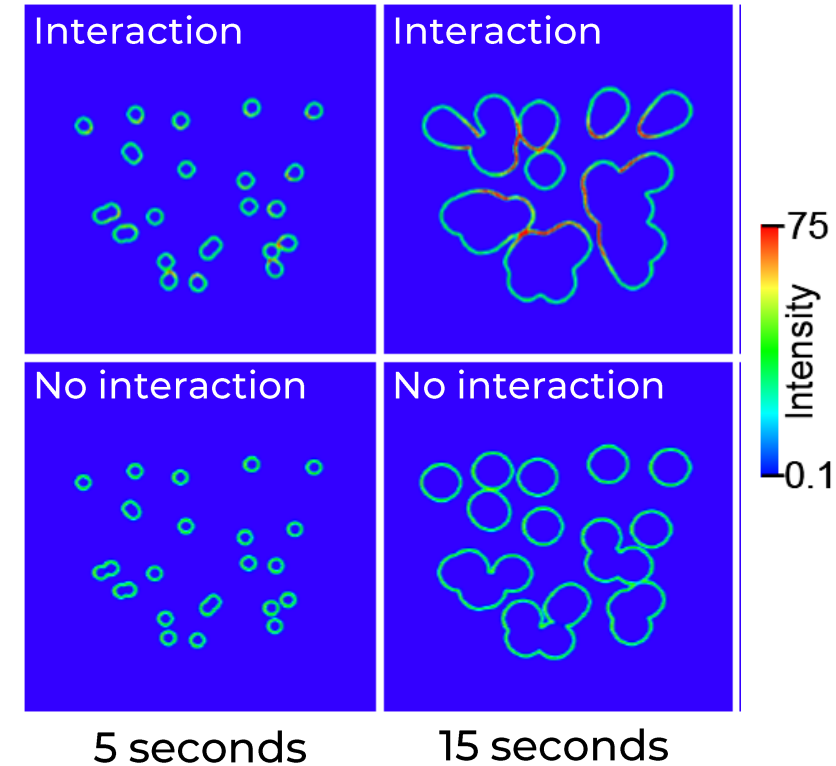
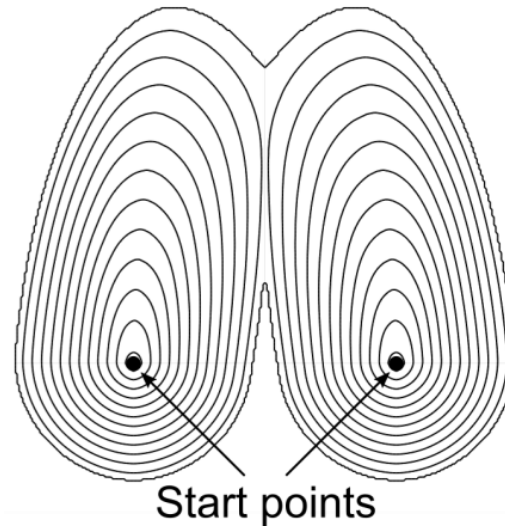


# Modelling dynamic fire propagation

## PYROGENIC POTENTIAL (NEAR FIELD) MODEL



Attraction through pyroconvective interaction



This is currently the only two-dimensional fire propagation model that can do this!

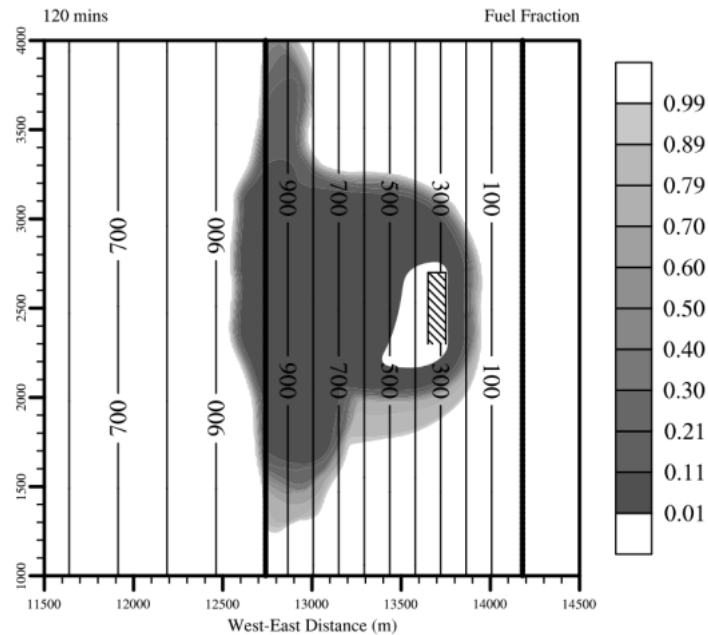
These considerations are critical for understanding spot fire coalescence and deep flaming!

# Modelling dynamic fire propagation

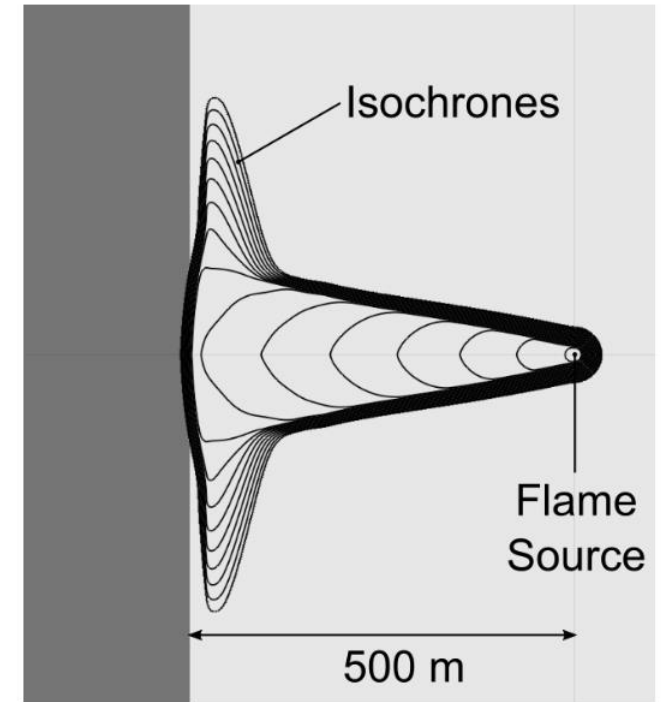
## PYROGENIC POTENTIAL (NEAR FIELD) MODEL



VLS Laboratory Experiment

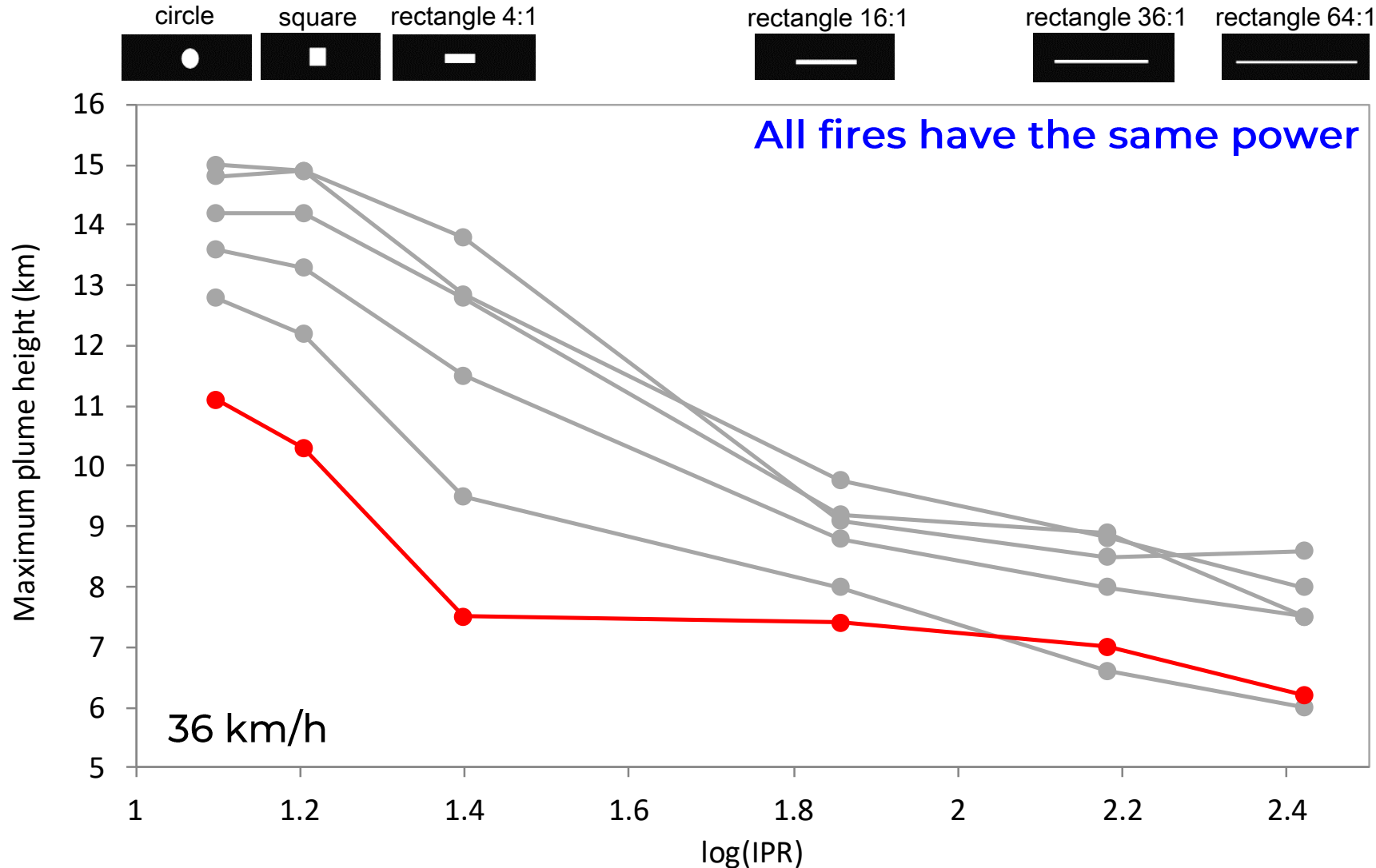


Coupled fire-atmosphere  
model simulation  
(several hours)



Pyrogenic potential model  
simulation  
(a few seconds)

# Extreme bushfire development



➤ The geometry and expanse of the burning region influences the pyroconvective potential of a bushfire.

➤ Possible implications for burning rates and involvement of larger fuels (e.g. Finney and McAllister)

# Utilisation



WHAT IS GOING  
ON HERE?

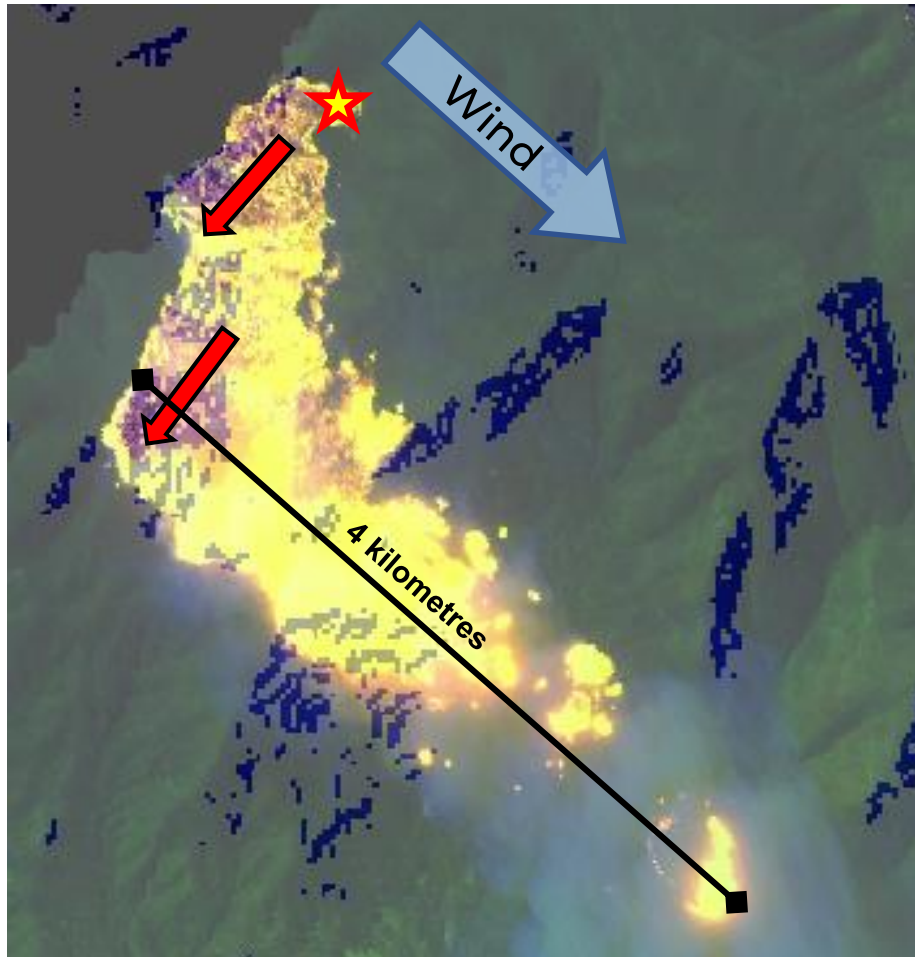
# Utilisation

Development of education and training materials for firefighters and fire behaviour analysts:

- Dynamic fire behaviours
  - Junction fires
  - Vorticity-driven lateral spread
  - Mass spotting and spot-fire coalescence
- Extreme bushfire development
- Prescribed burning tactics

# Utilisation

Development of tools for identifying regions prone to mass spotting



- Scaled to fit operational practice and embedded in current operational frameworks
- Automatically incorporates relevant spatial information, including forecast updates or scenario inputs
- Training packages including video material.