

FRANCE AND AUSTRALIA

Bushfire Science Workshop

Panel 2: Wildfire Science

The science of extreme fire:
Access to and use of complex data,
fire weather and fire behaviour.



LABORATOIRE
SCIENCES POUR
L'ENVIRONNEMENT
UMR 6134 SPE



Jean-Baptiste Filippi

Research Communities

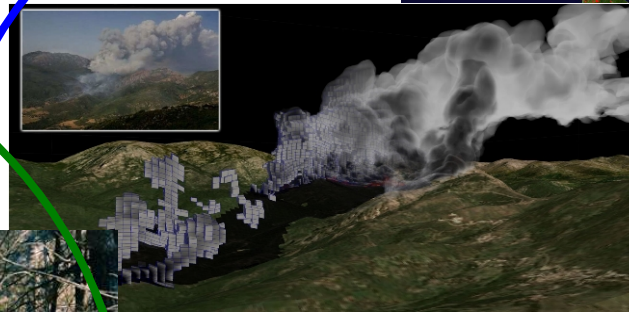
**Thermal Transfer
Ecology**



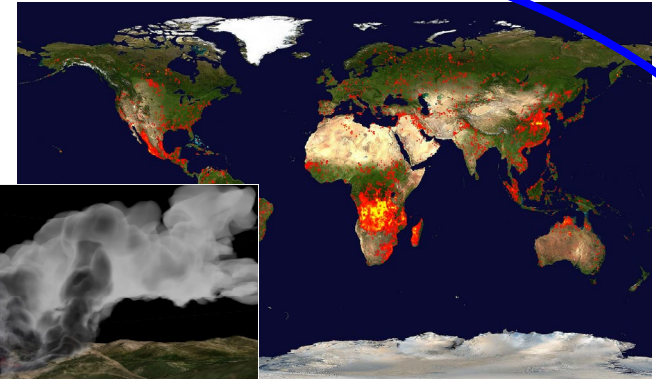
Flame scale



Fire behavior



Fire-atmosphere
interactions



Global impacts

Geophysics

Firecaster Program

Collaborative trans-disciplinary research

- French national program (ANR Funded)
- Forecasting numerical toolchain
- Coherent models and data flow
- Urgent Computing for area at risk
- High Resolution short-term forecast
- Operational prototype

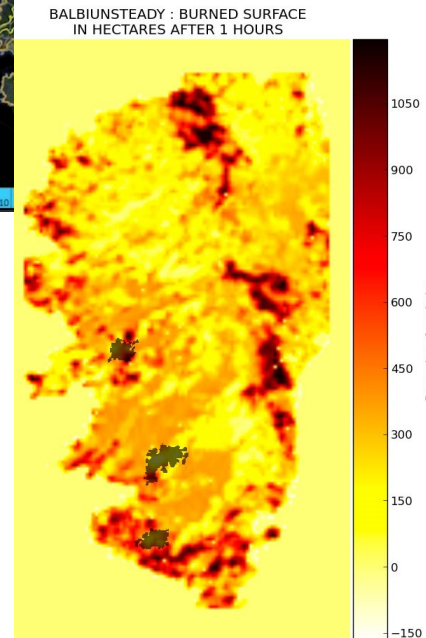
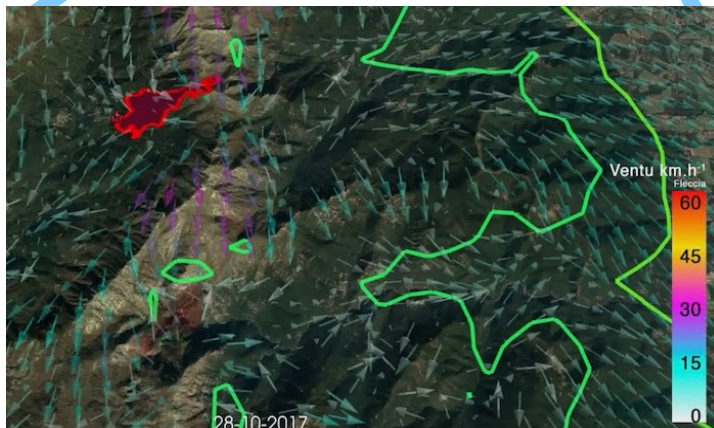
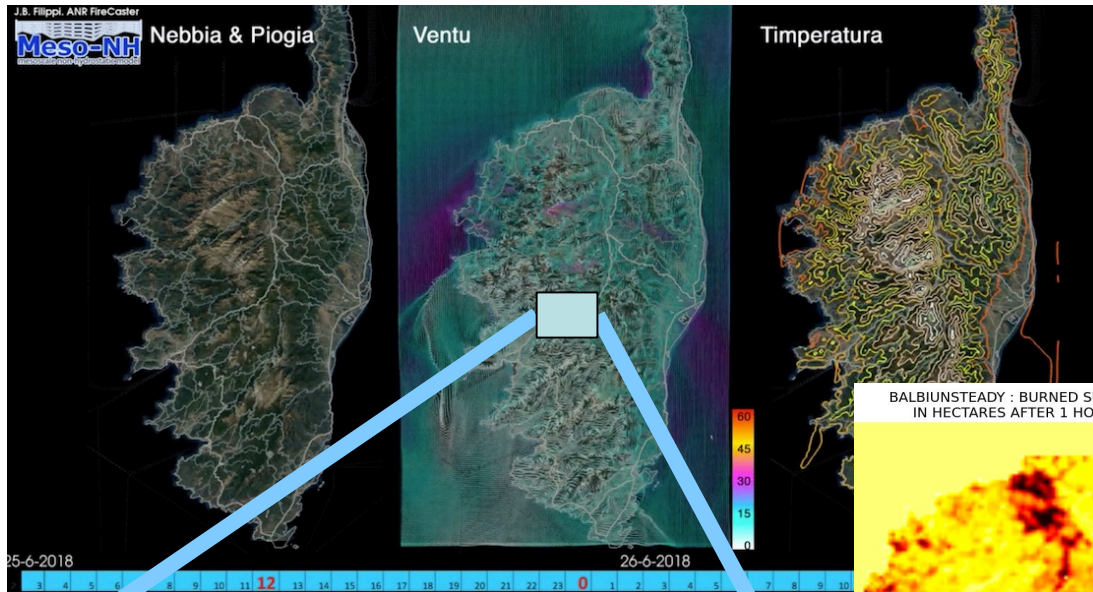


Firecaster.org

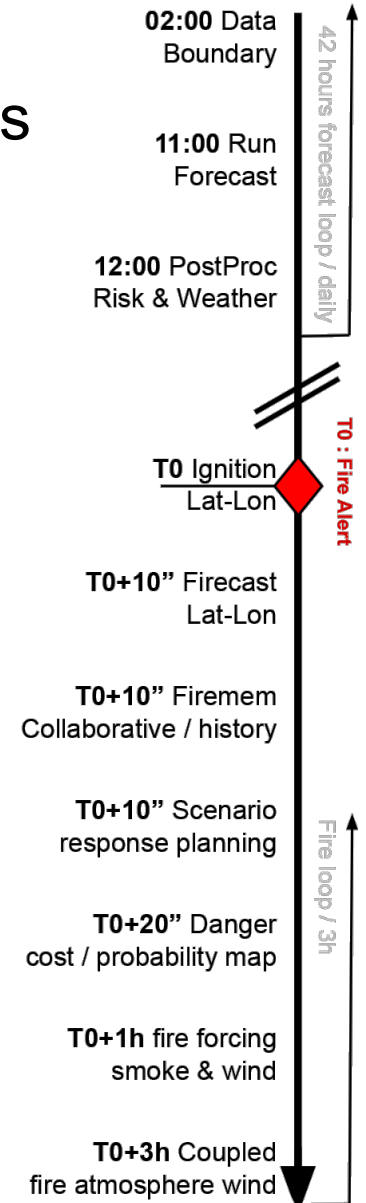
Wildfire research so hot that it burns numbers in your supercomputer

Firecaster Program

- Daily forecast and Neural-net based risk maps

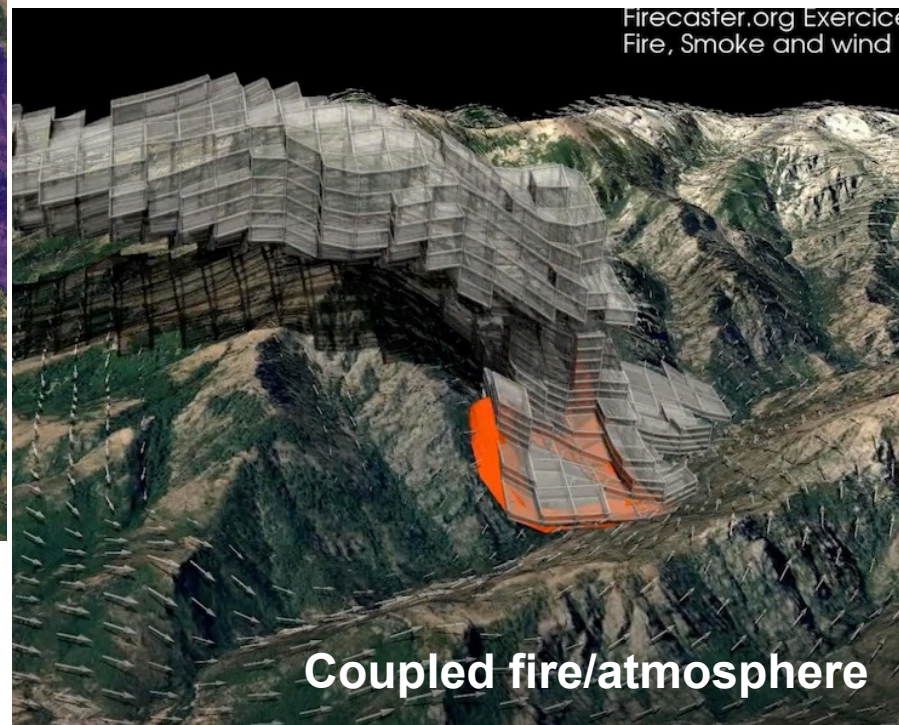
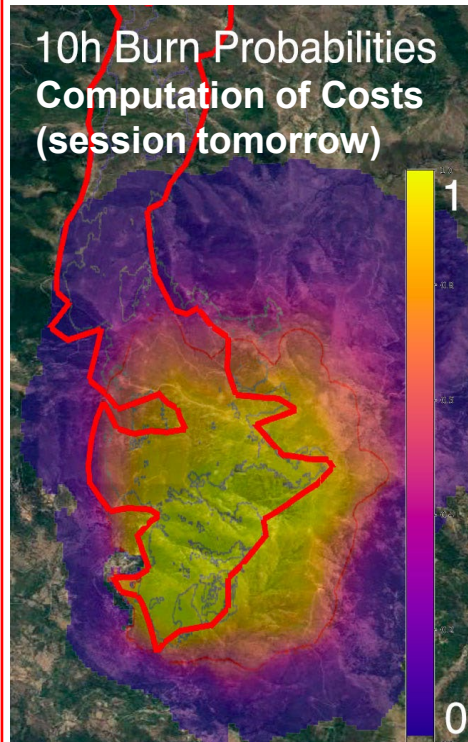


Firecaster Timeline



Firecaster Program

- In case of fire :



Firecaster Timeline

02:00 Data
Boundary

11:00 Run
Forecast

12:00 PostProc
Risk & Weather

T0 Ignition
Lat-Lon

T0+10" Firecast
Lat-Lon

T0+10" Firemem
Collaborative / history

T0+10" Scenario
response planning

T0+20" Danger
cost / probability map

T0+1h fire forcing
smoke & wind

T0+3h Coupled
fire atmosphere wind

42 hours forecast loop / daily

T0 : Fire Alert

Fire loop / 3h

Panel

- **Paul-Antoine Santoni** Director, Environmental Sciences Laboratory, University of Corsica Forest, Forest Fire modelling at CNRS
- **Solène Turquety**, Laboratory for dynamic meteorology, IPSL, Sorbonne University
Atmospheric pollution from wildfires
- **Dr Jeff Kepert**, Bureau of Meteorology and Project Leader Bushfire and Natural Hazards CRC, Fire weather, pyro-cumulonimbus development and fire brand spotting
- **Professor Jason Sharples**, University of New South Wales Bushfire Research Group, Project Leader Bushfire and Natural Hazards CRC and Go8,
Complex weather and fire
- **Dr Marta Yebra**, Australian National University, Bushfire and Natural Hazards CRC and Go8,
Remote sensing and flammability of landscape