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Progress in understanding springtime fire weather in Tasmania

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Project Genesis

- Perception for many years of a “bump” in the fire season (Oct-Mar) in spring (SON):
 - Is this the case?
 - If so, why?
 - Importantly, can it be forecast?



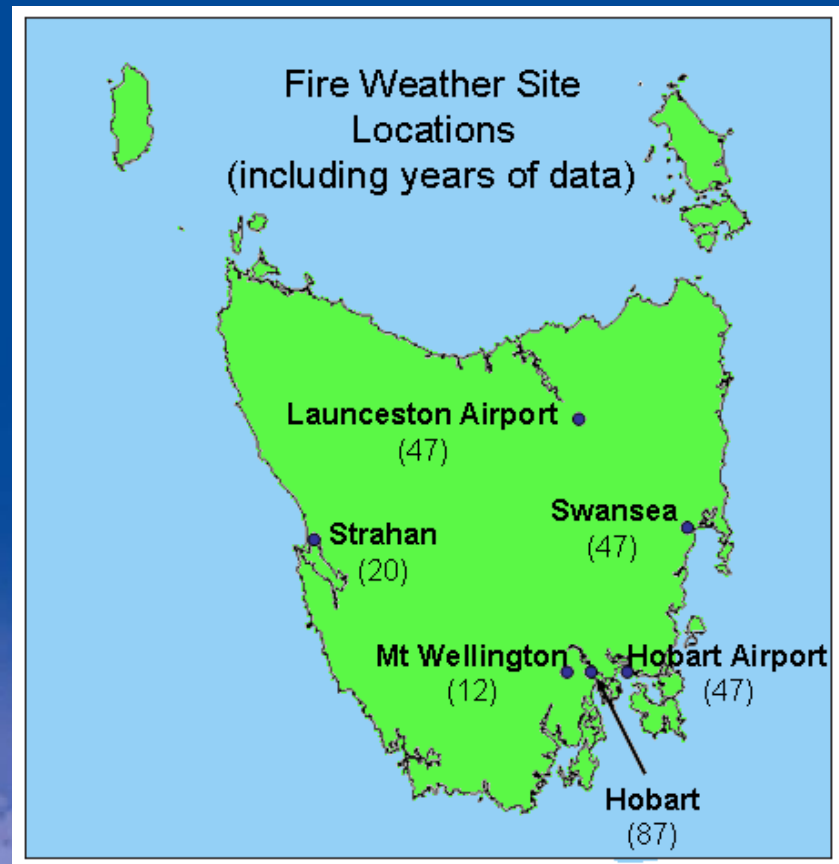
Programme

- Climatology
- Case studies of significant events
- Synoptic climatology
- Possible further work incl:
 - Teleconnections
 - Areal extent of “bump” from NWP
 - CFT & potential future trends



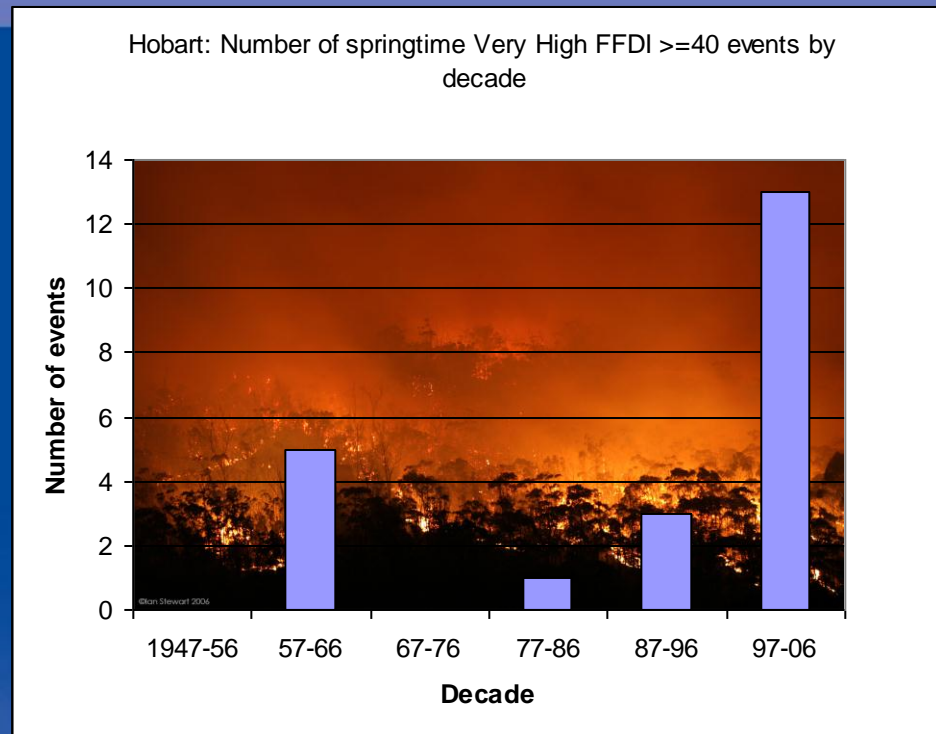
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Climatology





Spring Bump?

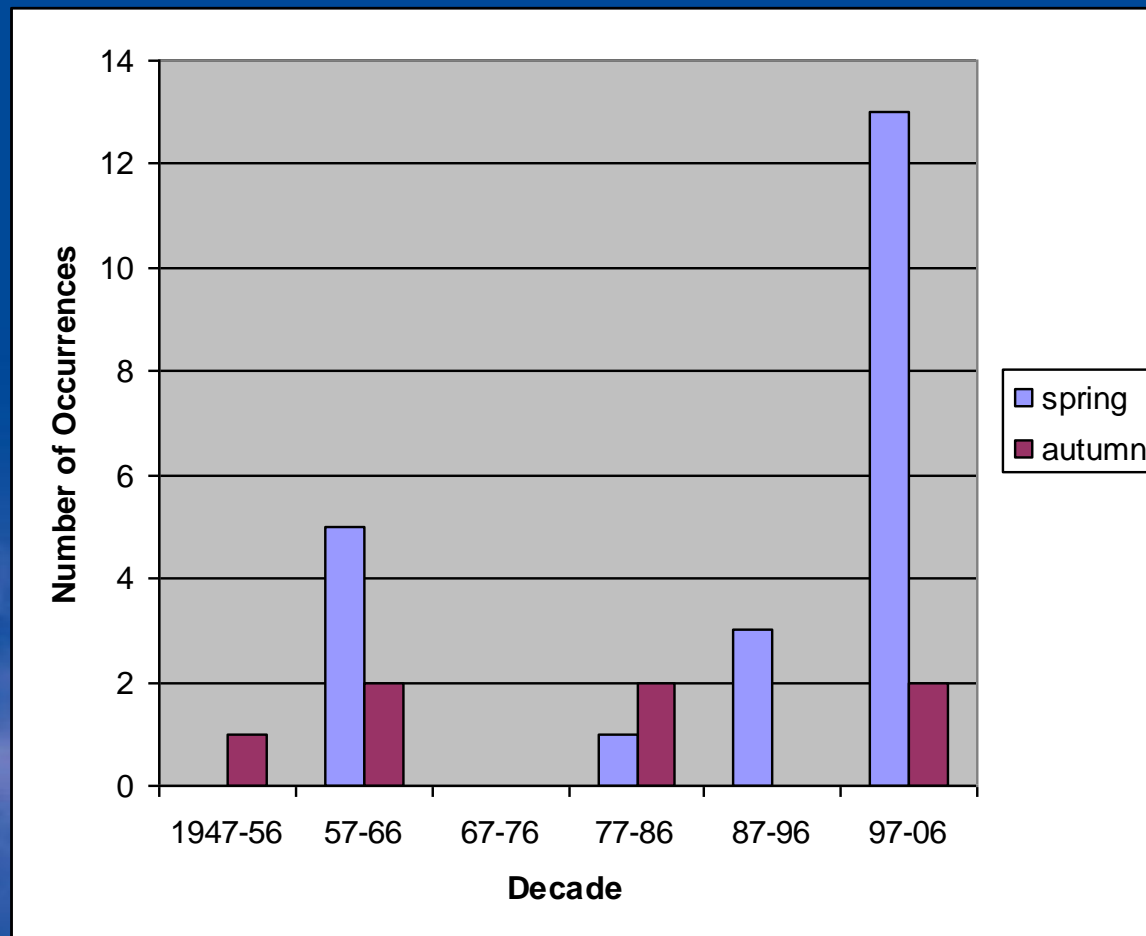


Roughly, one year in two has a spring secondary (or sometimes primary!) peak...and getting more significant...BUT confined to southeast and east



Instrumental Artifact?

No corresponding autumnal change for Hobart...So is real.

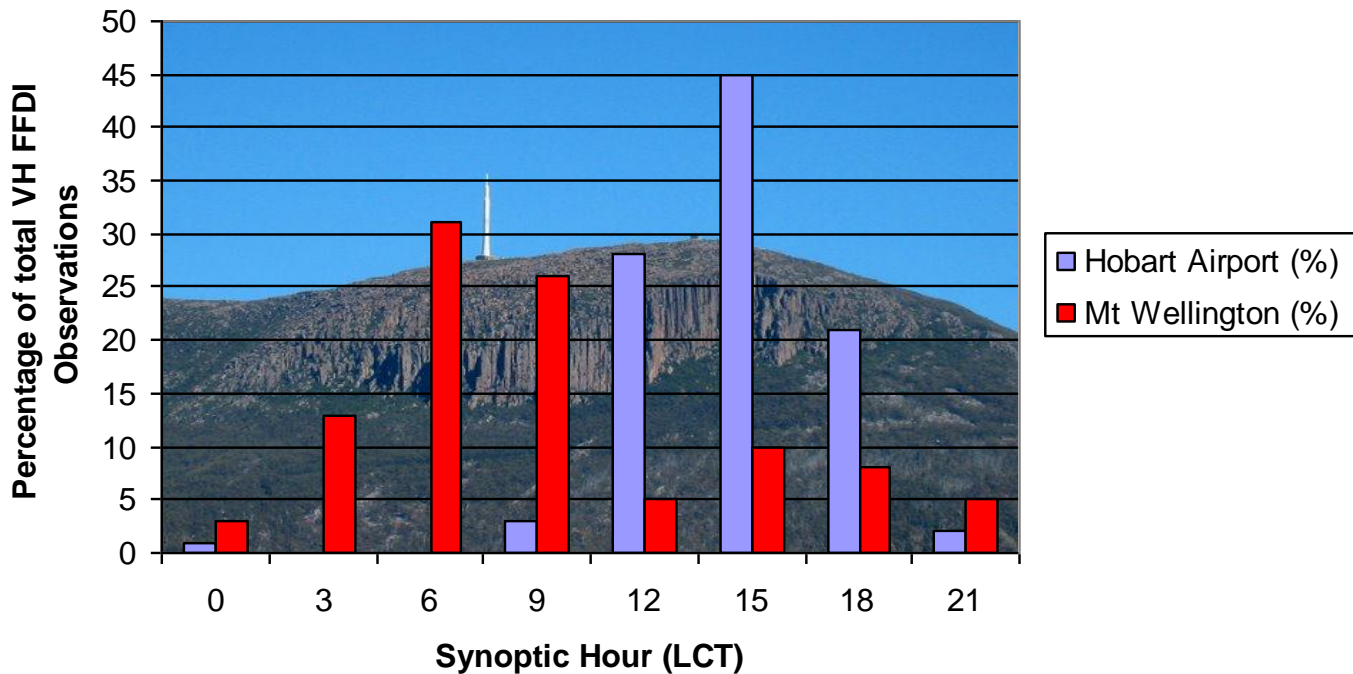




Some other outcomes:

- Higher elevation station(s) peak earlier in day

Comparison of Times of Peak Fire Danger for Low and High Elevation Stations



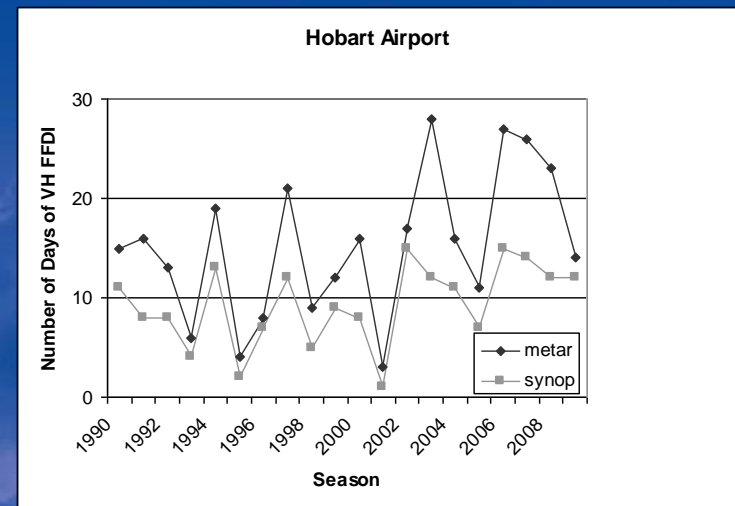
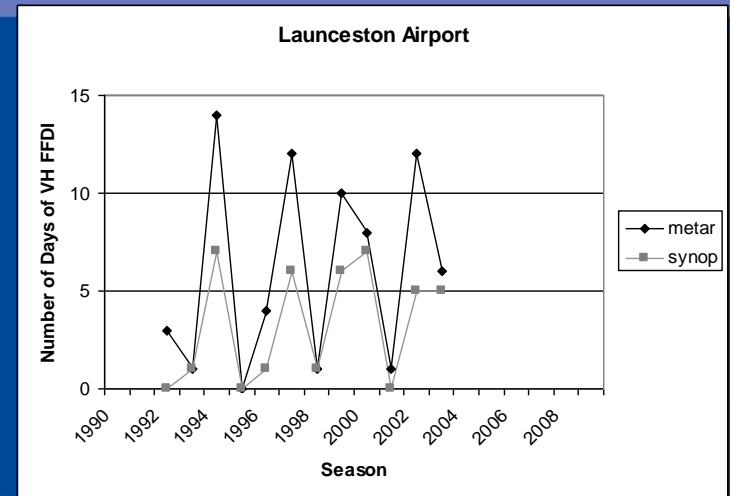
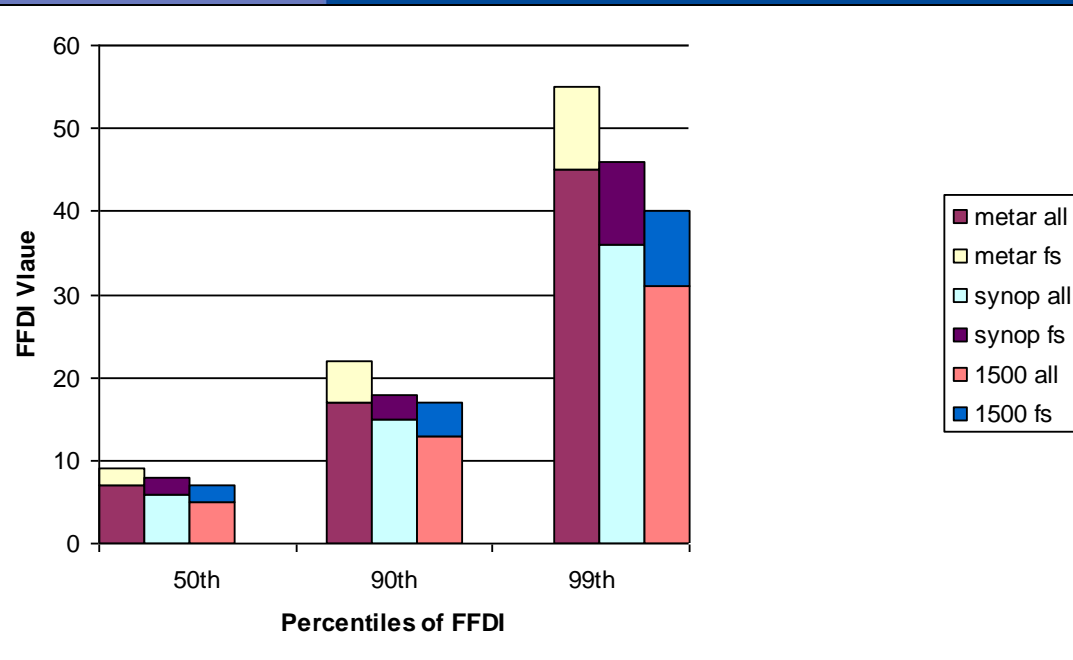


High temporal resolution dataset

- Mid-afternoon observations don't resolve all events
- Implications for historical & future climate studies
- ..and for operational fire/land managers



High temporal resolution (1/2 hr) data

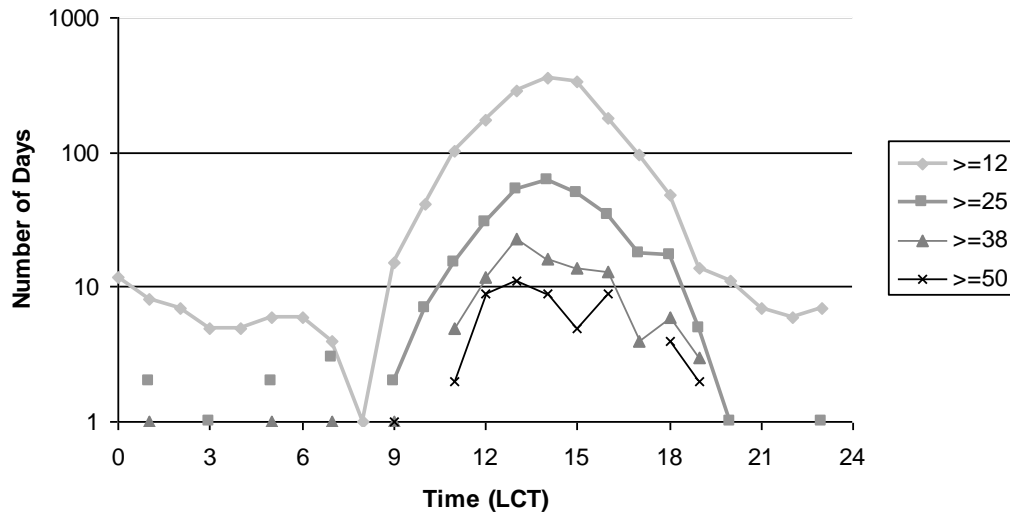




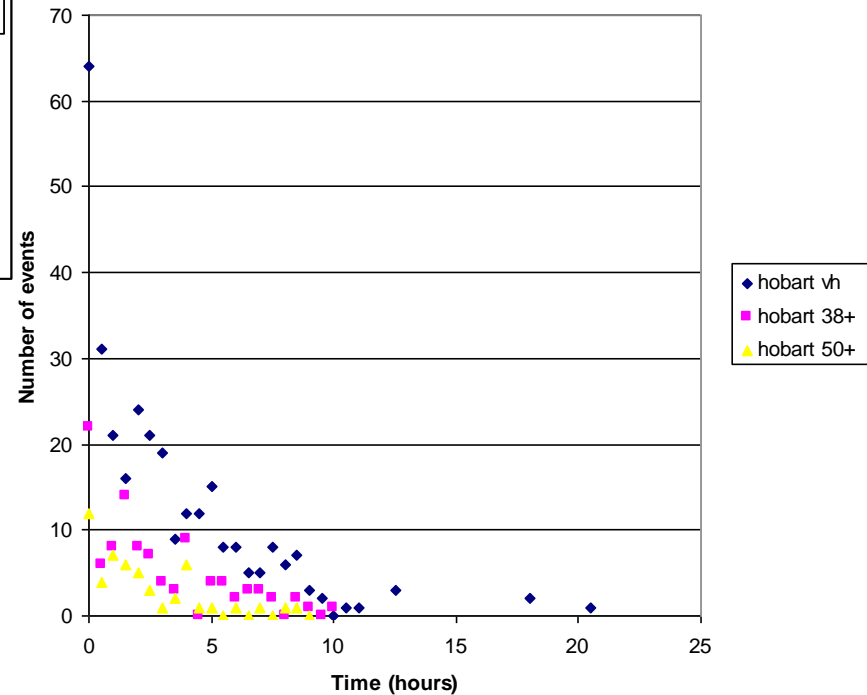
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Can also derive other information...

Hobart Airport Time of Peak FFDI



Hobart Airport Duration of Events

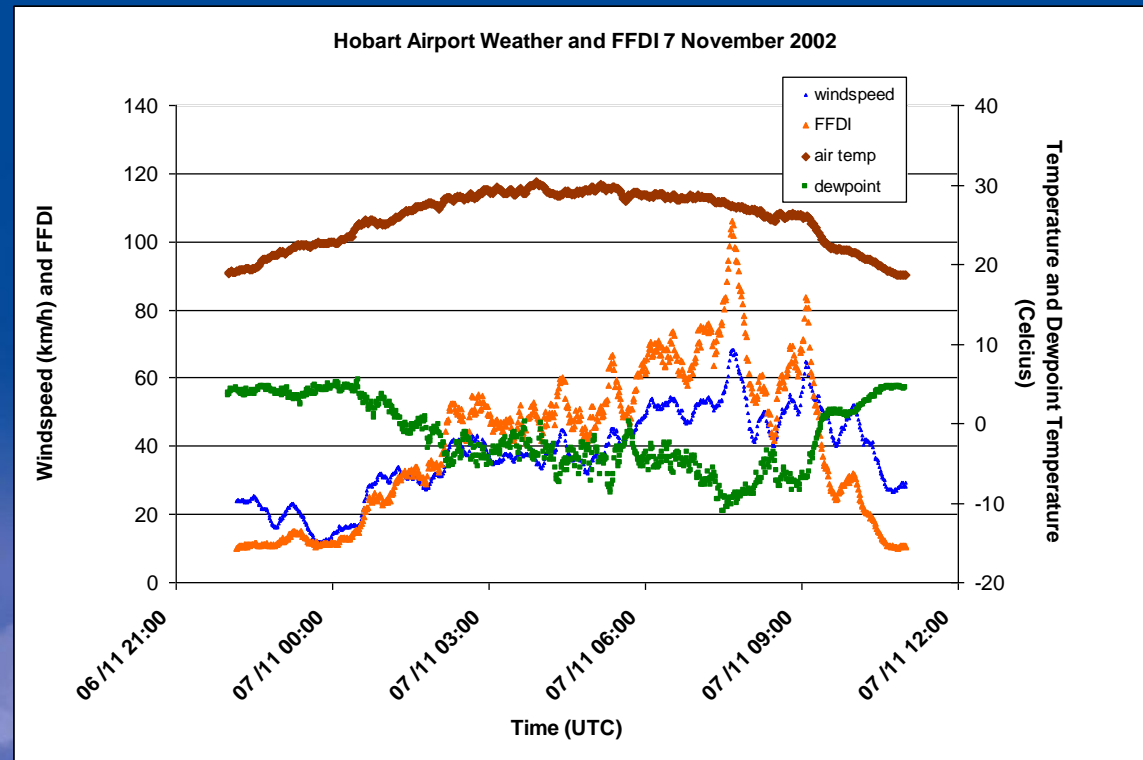
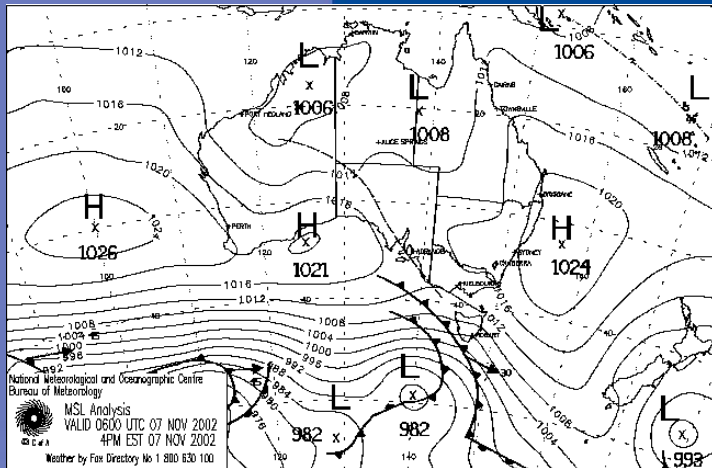




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Zoom in on high-end events

7 November 2002





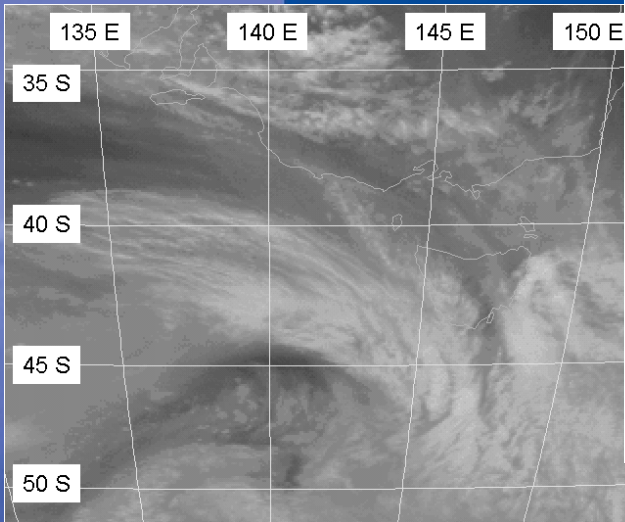
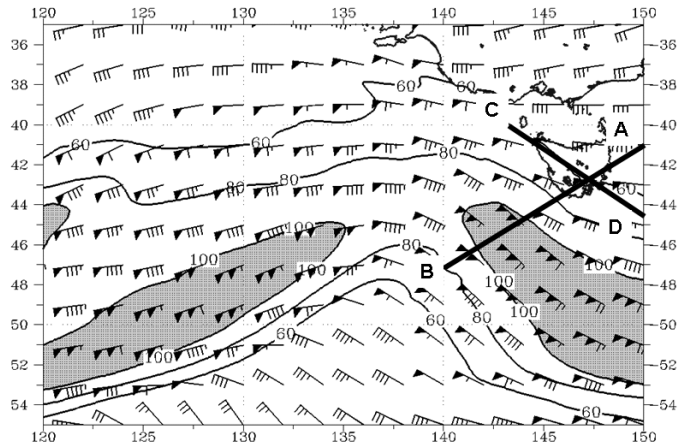
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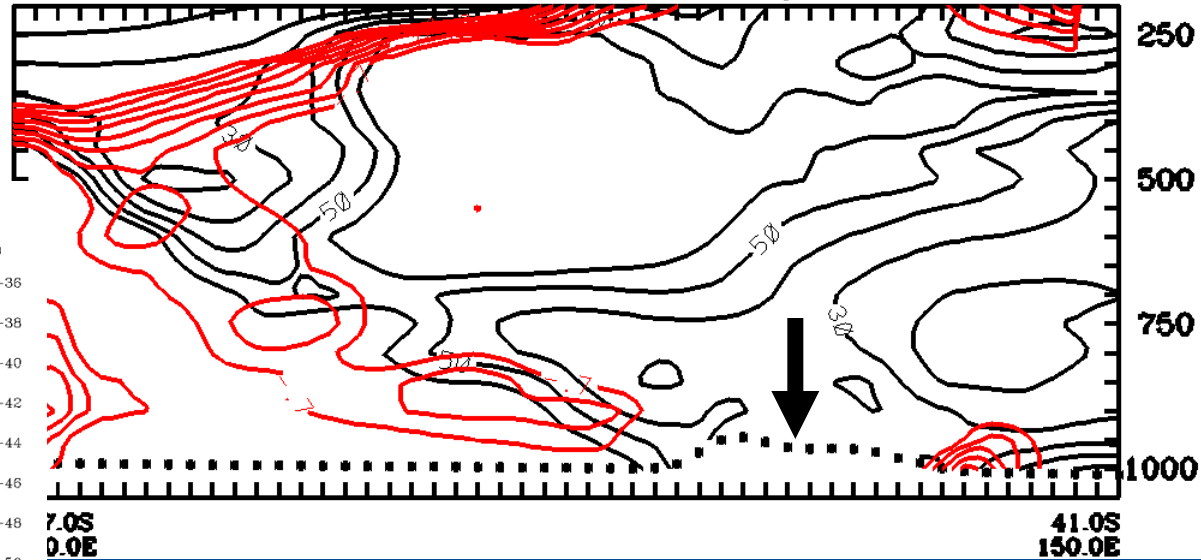
0.125 degree meso-LAPS forecast

18HR FORECAST VALID 0600 UTC Thu 7 NOV 2002

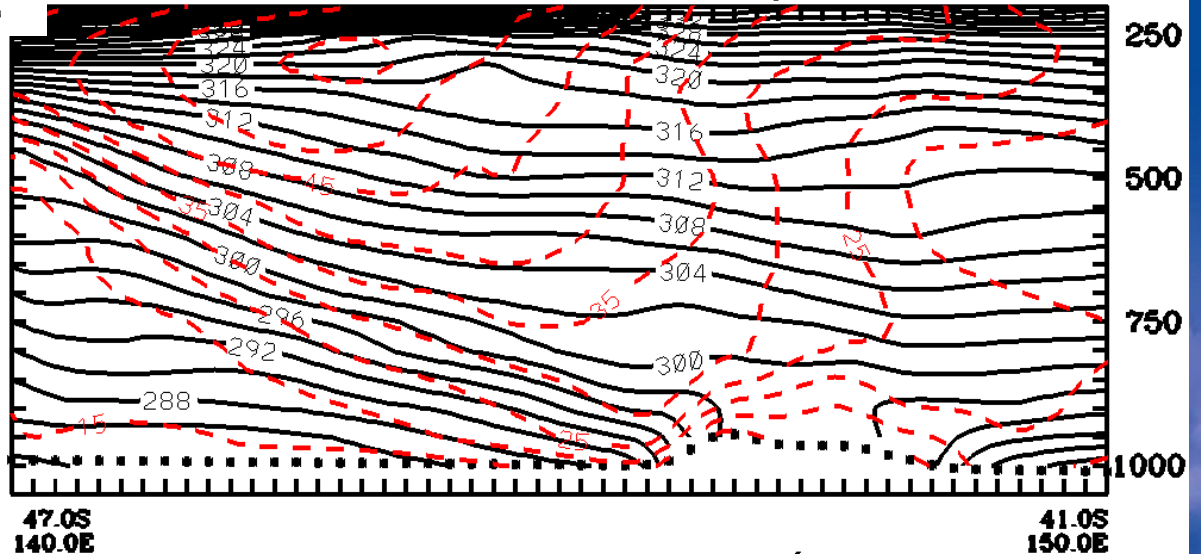
WIND 300 hPa



18-hr FORC RELH XN for 20021107/0600 UTC



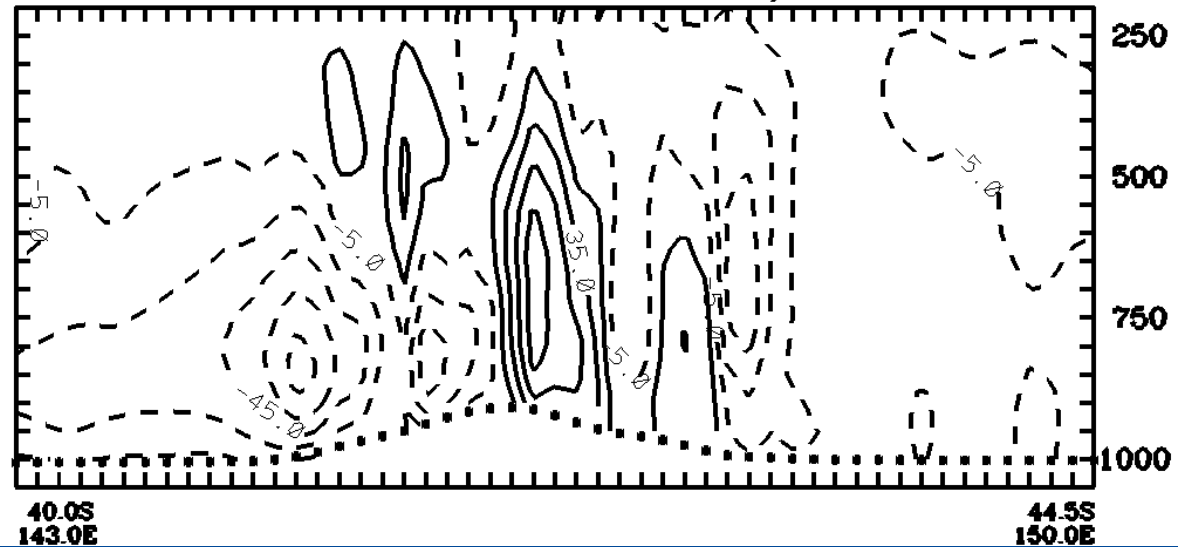
18-hr FORC THET XN for 20021107/0600 UTC



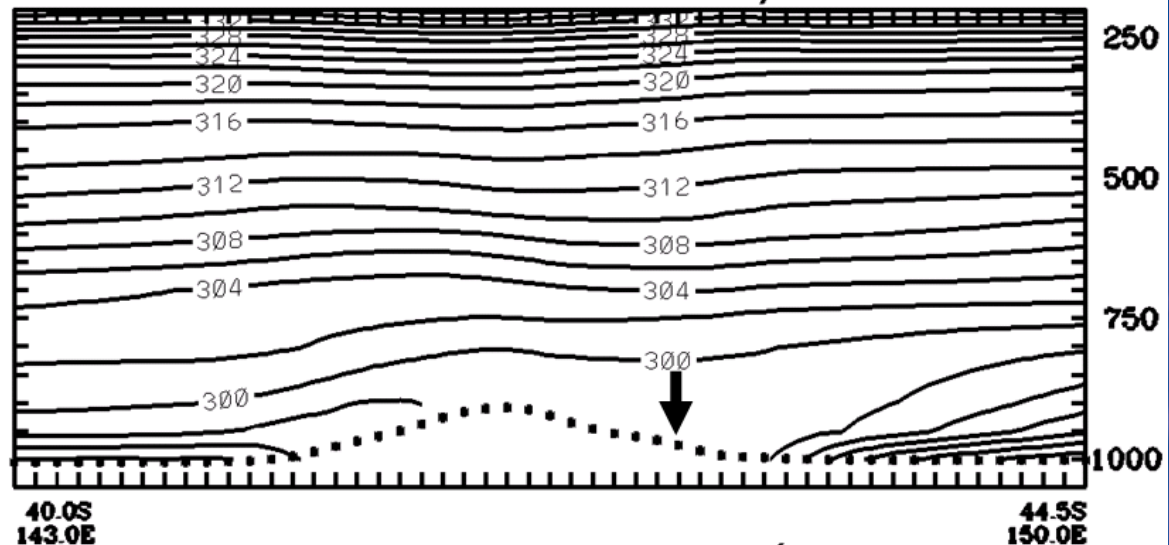


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18-hr FORC OMEG XN for 20021107/0600 UTC



18-hr FORC THET XN for 20021107/0600 UTC



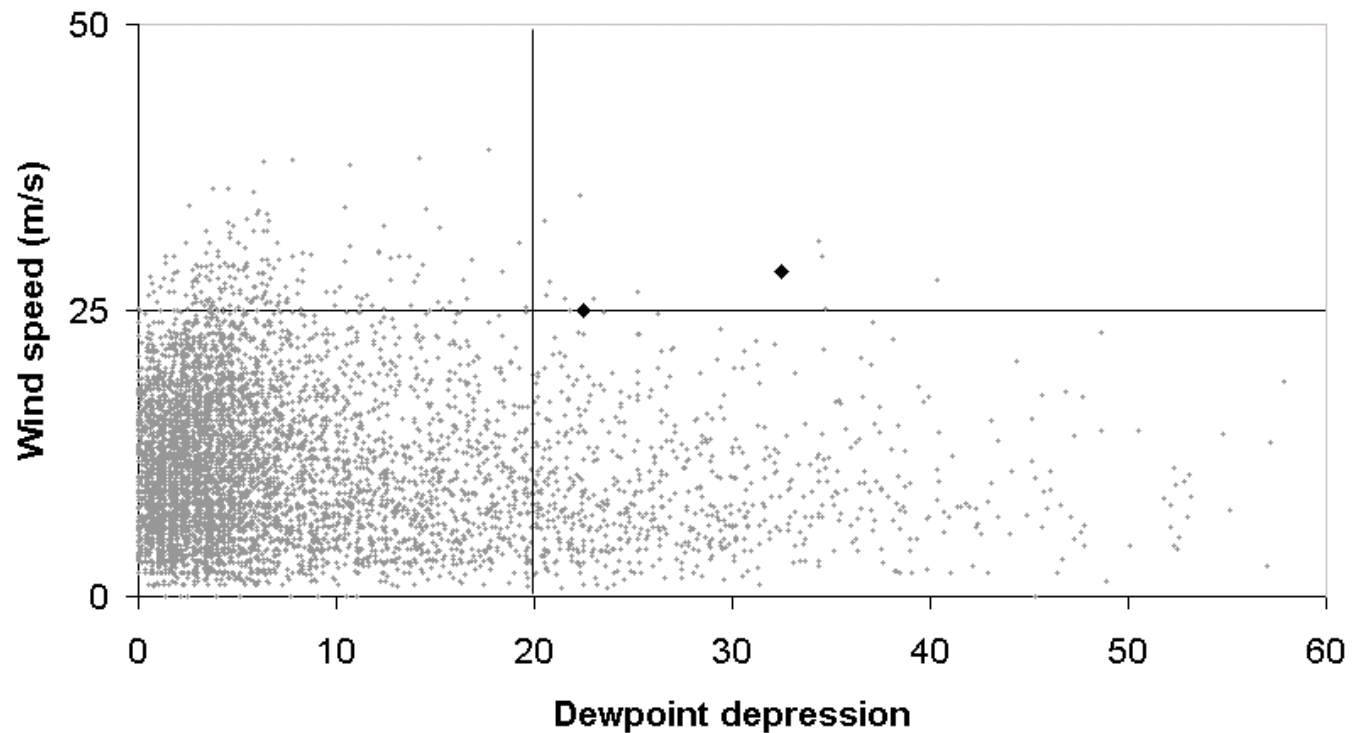


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Discrimination at 850 hPa of key events

Wind speed vs Dewpoint depression Hobart Airport 1992-2010





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