



# Auto-assess

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PRIMAVERA workshop 25/11/15



# Auto-assess: Background and aims

- Development began in 2006 (although some elements have existed since early-1990's).
- Development has been unfunded (one scientist responsible for control code; one scientist for each assessment area).
- Primary aim is to produce a **comprehensive** set of metrics & diagnostics to inform model development.
- Although currently climate focused, future development may extend capability to shorter timescales (where specific forecast-ob time matching is not required).



# Auto-assess: Current status

- Produces a reasonable set of metrics & diagnostics, although there are some omissions.
- Scientific development currently frozen whilst code is re-written in Python using the IRIS library (<http://scitools.org.uk/iris/>).
- Aim to produce a first external release to UM user community in early 2016.

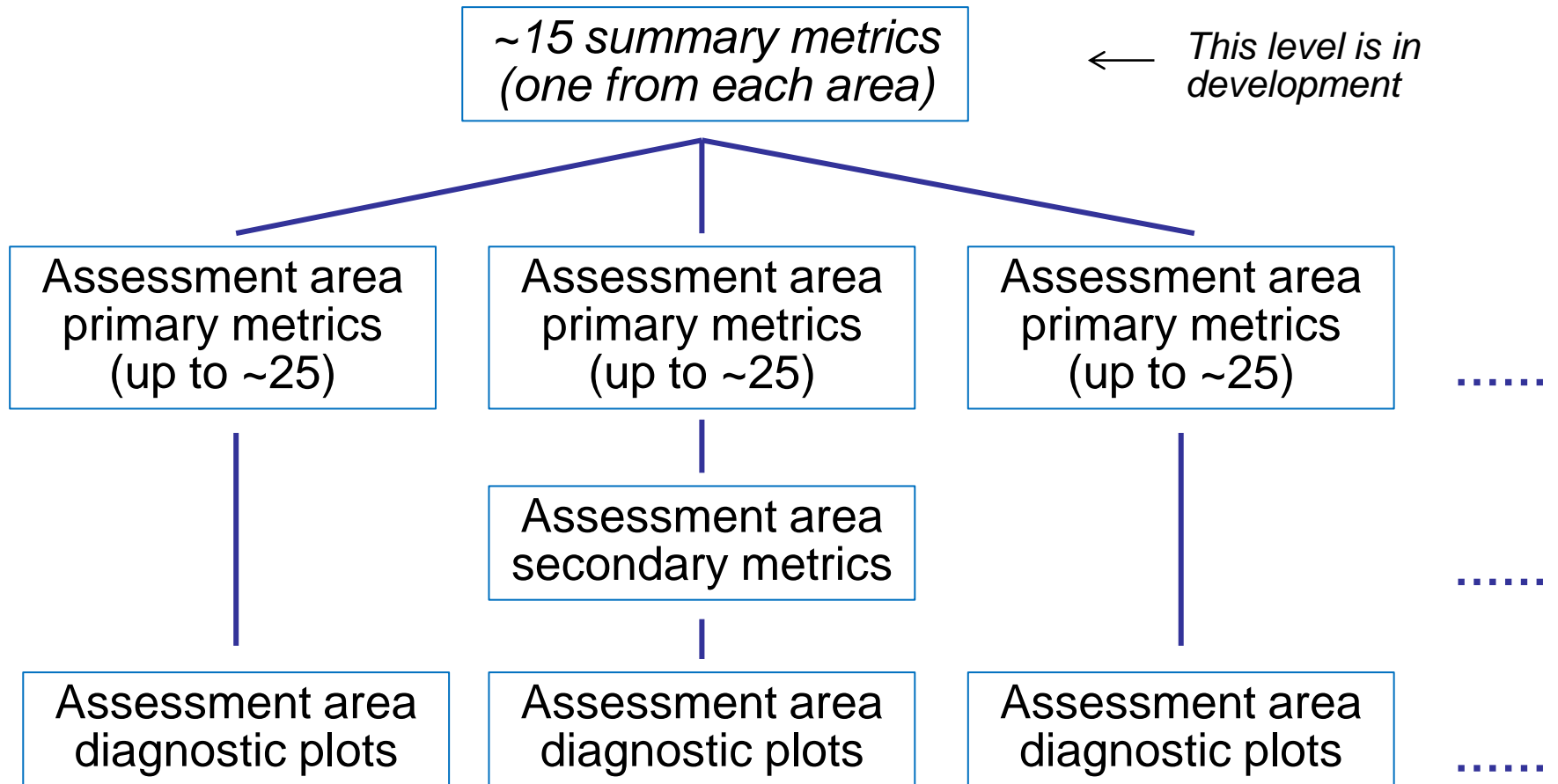


# Current & *planned* assessment areas

- Global tropospheric circulation
- Conservation
- Clouds & radiation
- Hydrological cycle
- Asian monsoon systems
- MJO
- ENSO
- Processes over Africa
- Tropical cyclones
- Mid-latitude storm tracks and blocking
- Stratosphere
- Land surface
- Aerosols
- *Ocean*
- *Sea Ice*



# Presentation structure



*~15 assessment areas* →



# Example output

- [http://collab.metoffice.gov.uk/twiki/bin/viewfile/Static/development/AutoAssess/antie\\_v\\_antic/index.html](http://collab.metoffice.gov.uk/twiki/bin/viewfile/Static/development/AutoAssess/antie_v_antic/index.html)
- [http://collab.metoffice.gov.uk/twiki/bin/viewfile/Static/development/AutoAssess/aoqmg\\_aorie\\_aorig\\_aorih\\_v\\_antie/index.html](http://collab.metoffice.gov.uk/twiki/bin/viewfile/Static/development/AutoAssess/aoqmg_aorie_aorig_aorih_v_antie/index.html)



# Auto-assess: Future work

- Currently assumes native UM file format (pp), but **PRIMAVERA funding will allow a re-write in 2016 to enable CF-netCDF input at well.**
- Following this, the intention is to merge with ESM-ValTool, using the python-IRIS library as a backend.
- Ongoing development of metrics/diagnostics.
- Development of 'summary level' view.
- Document in a paper.

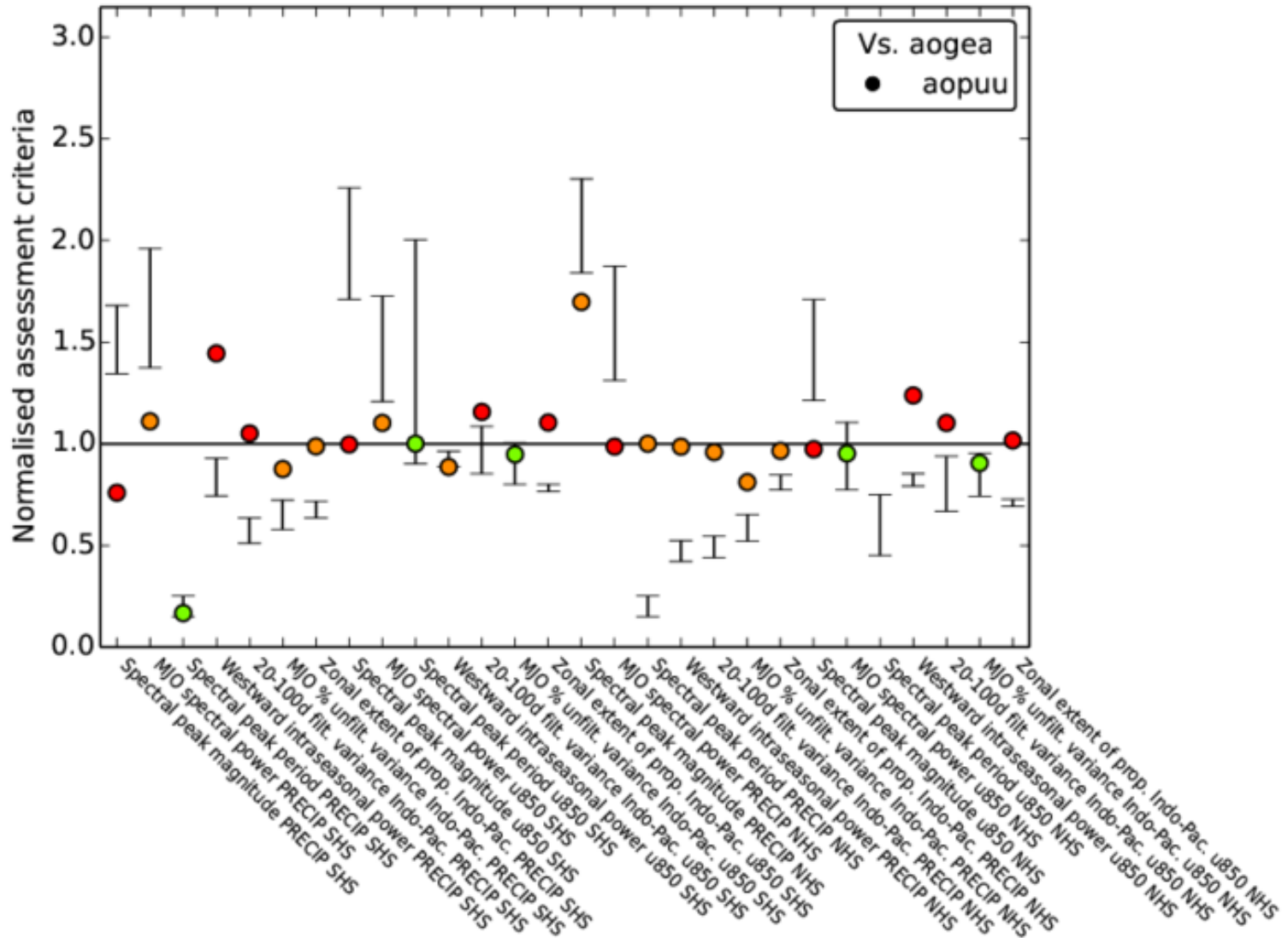


**Met Office**

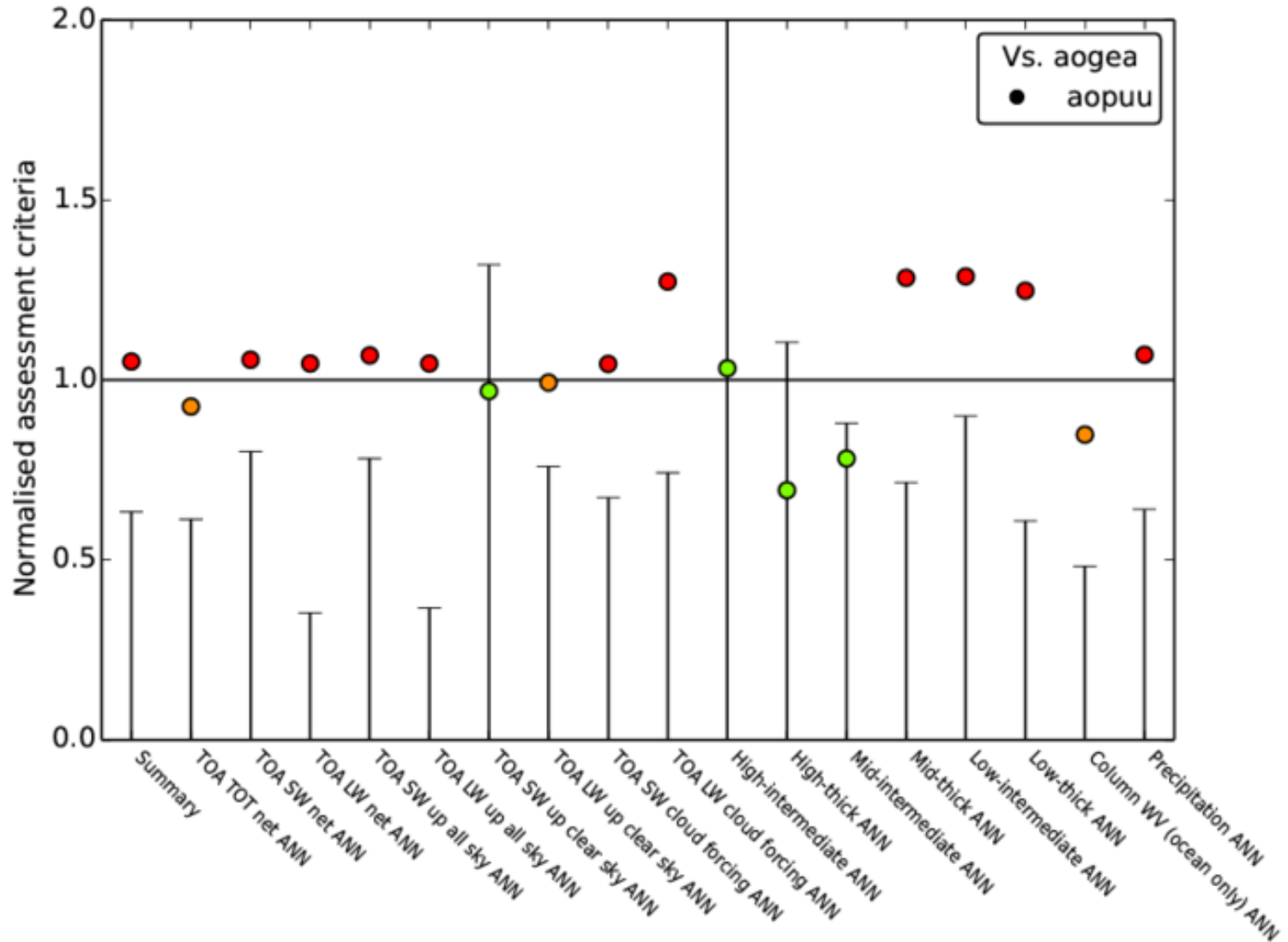




# Auto-assess metric plot



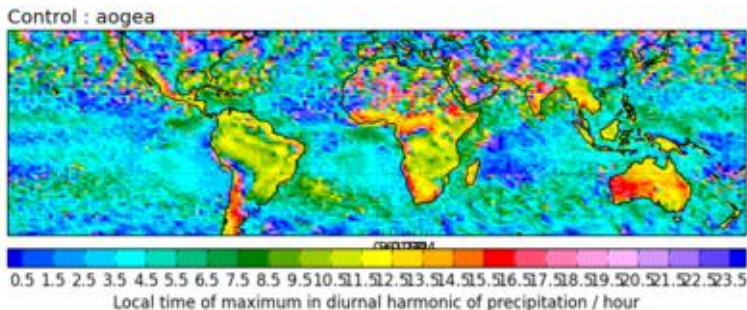
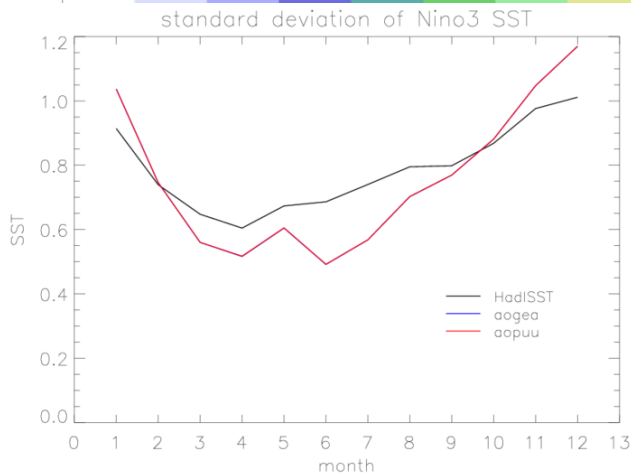
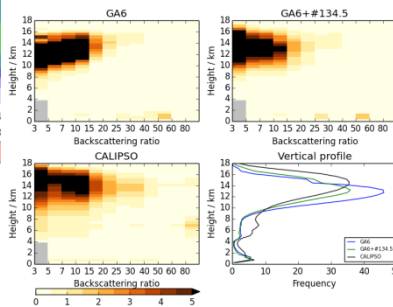
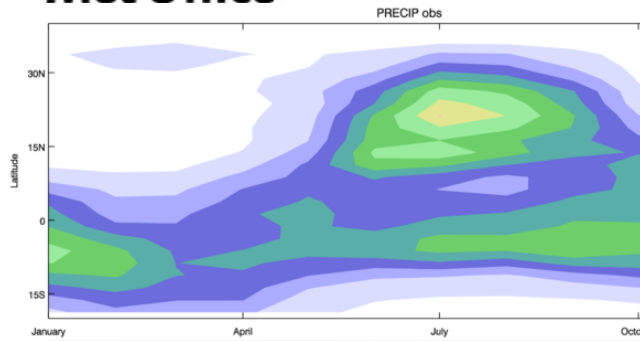
# Auto-assess metric plot



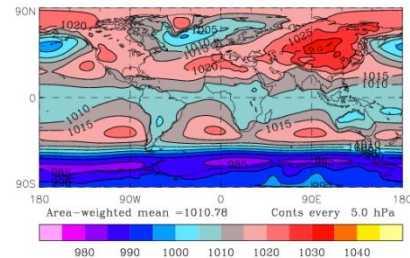


Met Office

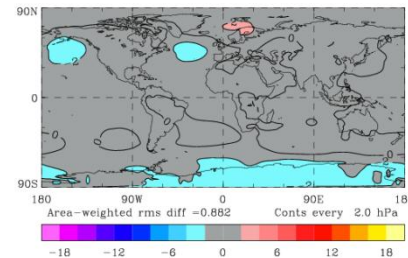
# Example diagnostics



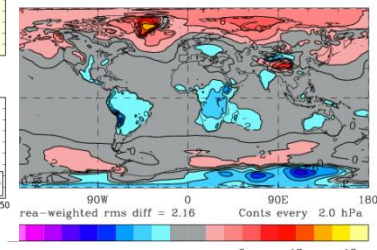
a) PMSL for djf  
AOPUU: GA6.0#134.5+mode



b) PMSL for djf  
AOPUU: GA6.0#134.5+mode minus AOGEA: GA6.0



c) PMSL for djf  
OGEA: GA6.0 minus ERA-Interim (1989-2008)



d) PMSL for djf  
AOPUU: GA6.0#134.5+mode minus ERA-Interim (1989-2008)

