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
~15 summary metrics (one from each area)

Assessment area primary metrics (up to ~25)

Assessment area secondary metrics

Assessment area diagnostic plots

Assessment area primary metrics (up to ~25)

Assessment area diagnostic plots

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Assessment area primary metrics (up to ~25)

Assessment area diagnostic plots

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~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/aoqmg_aorie_aorig_aorih_v_anti_e/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.
Auto-assess metric plot
Auto-assess metric plot