

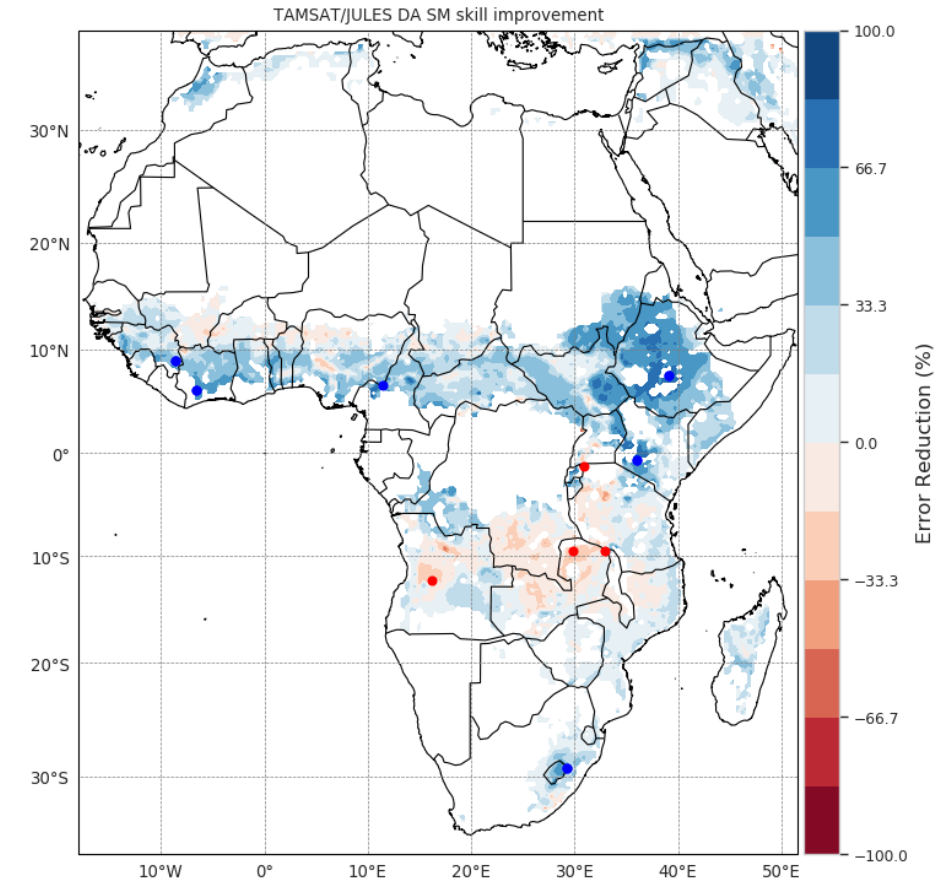
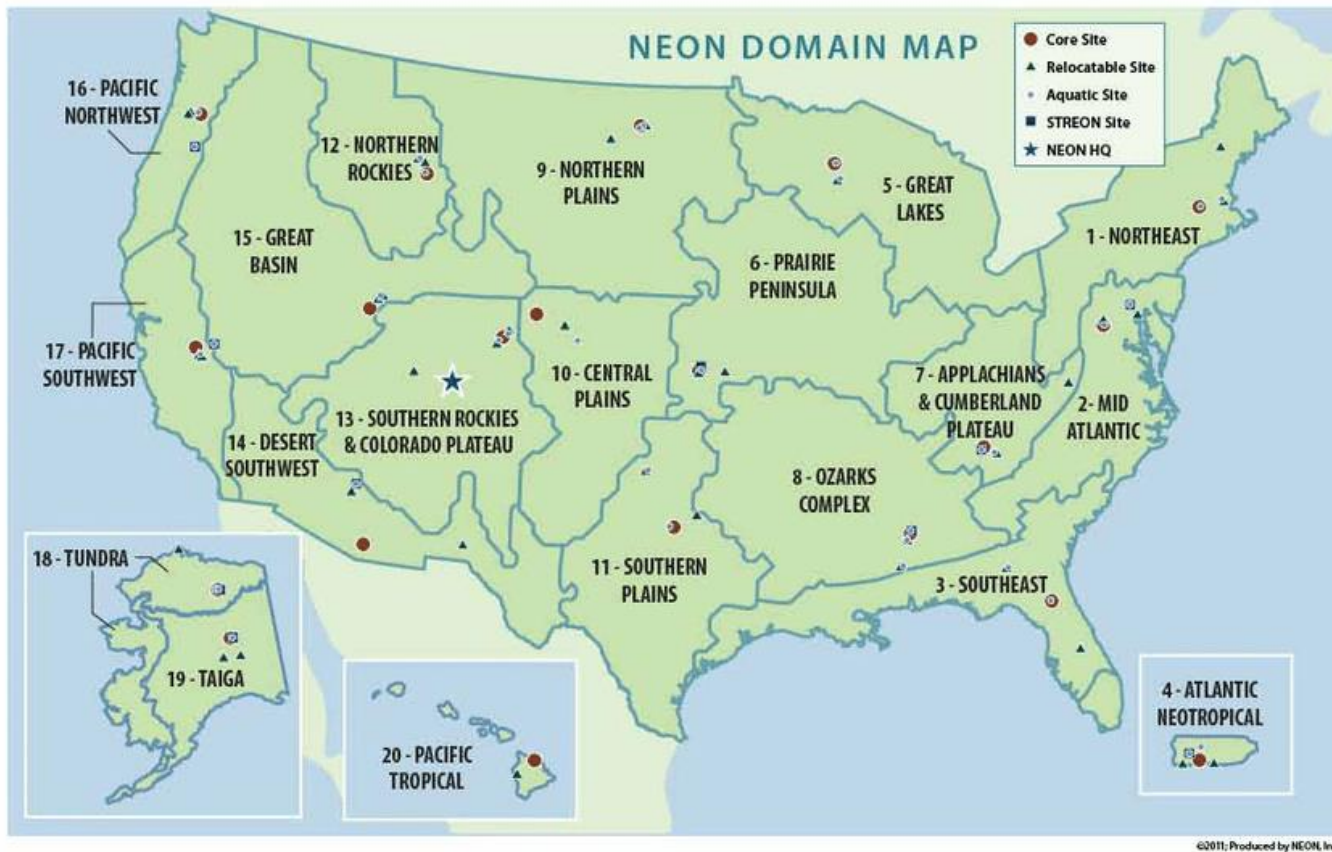
Constraining Coupled Carbon & Water Cycle Processes with Earth Observation

The NCEO NC International programme

Tristan Quaife & the CPEO team

UKCEH (Harris, Taylor), U. Leicester (Parker, Harrison, Moore, Boesch, Webb), U. Reading (Douglas, Haines, Dong, Bannister), U. Leeds (Chipperfield, Wilson), UCL (Lewis, Yin)

Working at NEON sites & tropical Africa

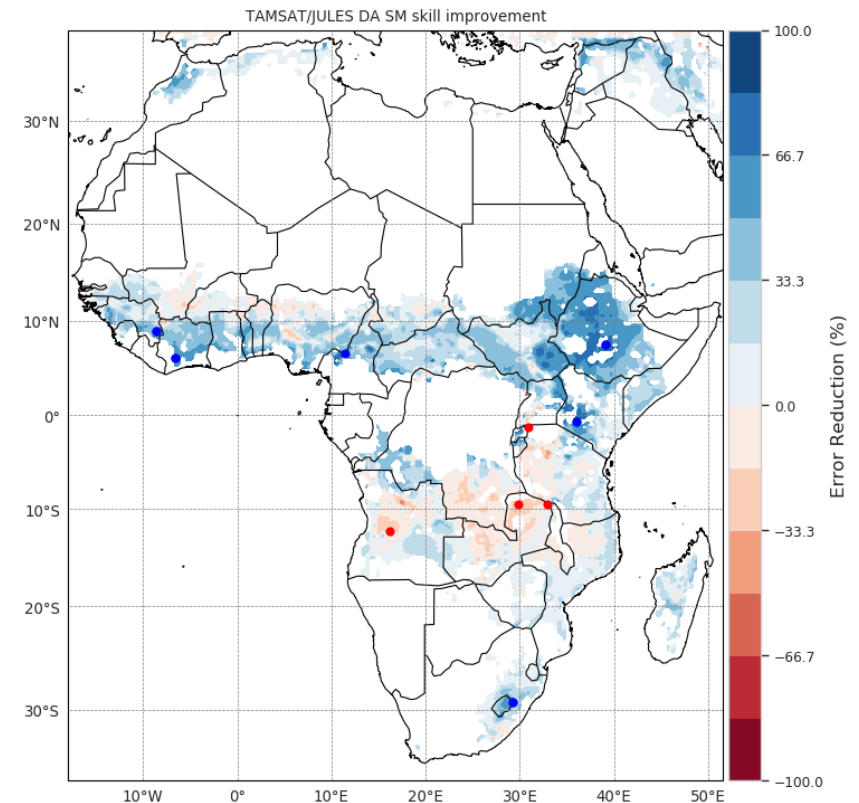


Main CPEO tasks

- Develop new EO data sets
 - Biophysical variables (LAI, leaf chlorophyll, etc)
 - Solar Induced Fluorescence (SIF)
 - Carbonyl Sulfide (COS)
- Scale EO variables from flux tower to landscape to catchment
- Interrogate processes in ESMs
- Assimilate observations into a bottom-up model (**JULES**) and a top-down budget model

JULES in the CPEO programme

- Assimilate EO & site data to constrain C & H₂O budgets
 - At NEON sites (inc. flux data and aircraft EO)
 - Across Tropical Africa (mostly satellite data)
- Build new diagnostics for SIF and COS
- DA methodology for process selection
 - Stomatal conductance
 - Soil water stress



Deliverables relevant to the JULES community

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- A JULES-NEON suite
 - Forced with site level meteorology
- New parameter sets tuned by DA
 - At NEON sites
 - Over wider scales
- NCEO EO data sets
- DA code made available to the community
 - *Possibly* with training courses (watch this space)

Collaboration with the JULES community

- We're happy to hear from anyone
 - Get in touch if you're interested in any part of what I have described
 - Especially if you want to work on DA or the NEON suites
- A priori, we envisaged working with:
 - The soil moisture JPEG
 - Teams working on stomatal conductance
 - (I will be coming to bug some relevant people during the meeting)