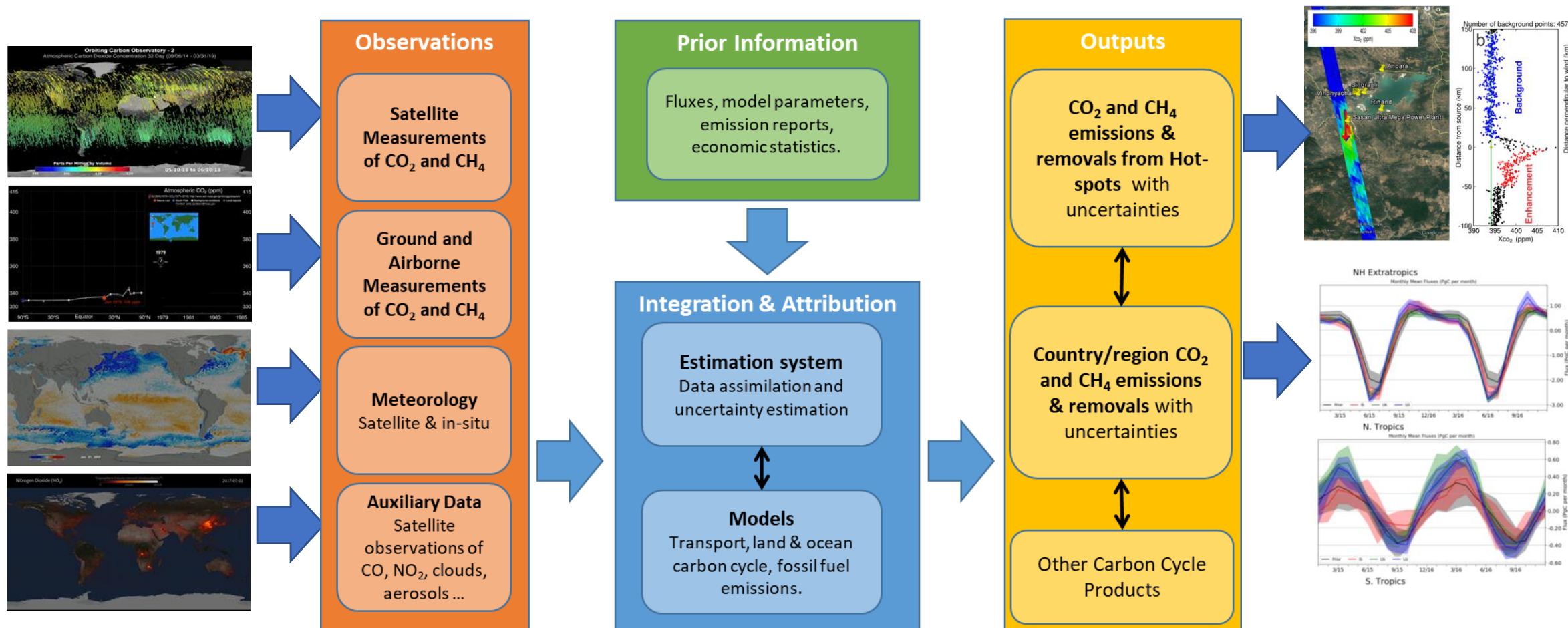# Products for the First Global Stocktake

David Crisp for AC-VC

NASA Jet Propulsion Laboratory, California Institute of Technology

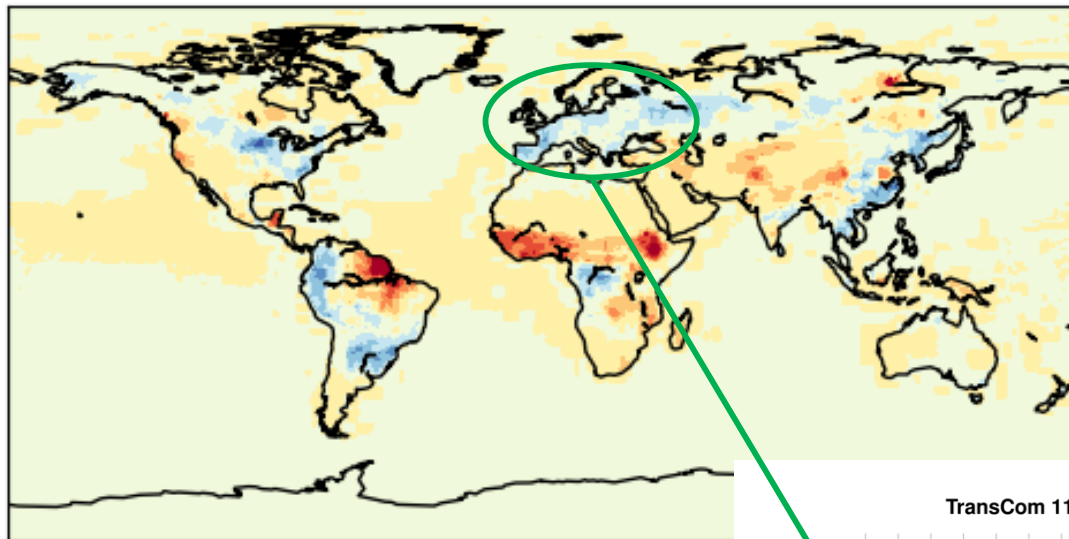Joint CEOS/CGMS WGClimate GHG Task Team Leads

A System Approach is Adopted to Deliver Atmospheric CO_2 and CH_4 Inventories

Product Production

Pilot Gridded Global CO_2 Flux Inventory
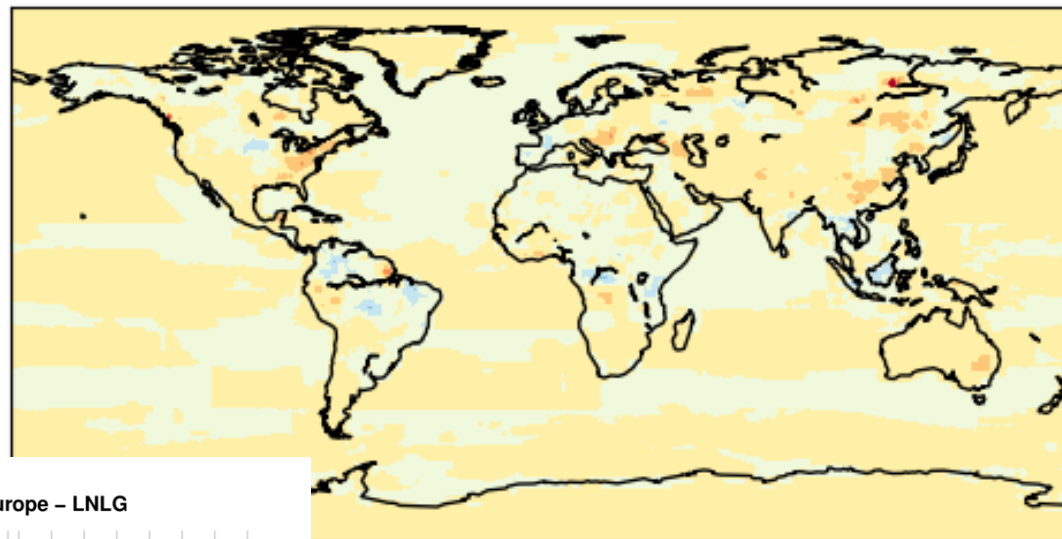
- An Ensemble of 10 atmospheric inverse models are being used to assimilate spacecraft and in situ measurements to derive spatially-resolved maps of CO_2 emissions and uptake

- Bottom-up inventories for fossil fuel etc. are used to establish the prior flux estimates

- Optimized ensemble mean CO_2 flux maps, at a spatial resolution of 2° by 2° at yearly intervals will be adopted as the baseline values
  - Monthly time series can also be extracted for 38 regions

- Variances across the ensemble will initially be adopted as uncertainty estimates

- Delivery formats and schedule are still under discussion
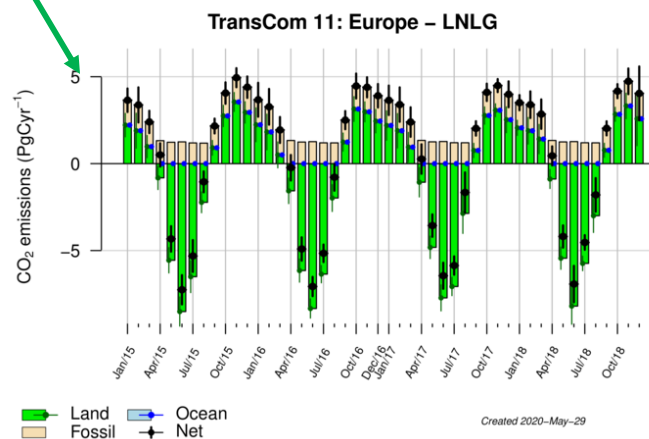
EnsMean: LN Land 2018 Annual Flux

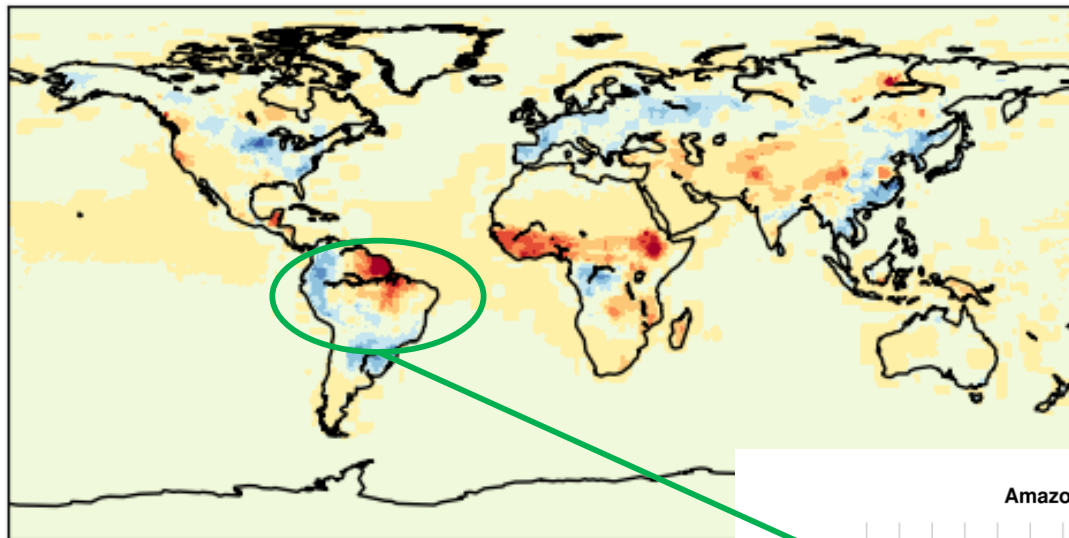EnsMean: LN Net 2018 Annual Flux Anomaly

TransCom 11: Europe – LNLG

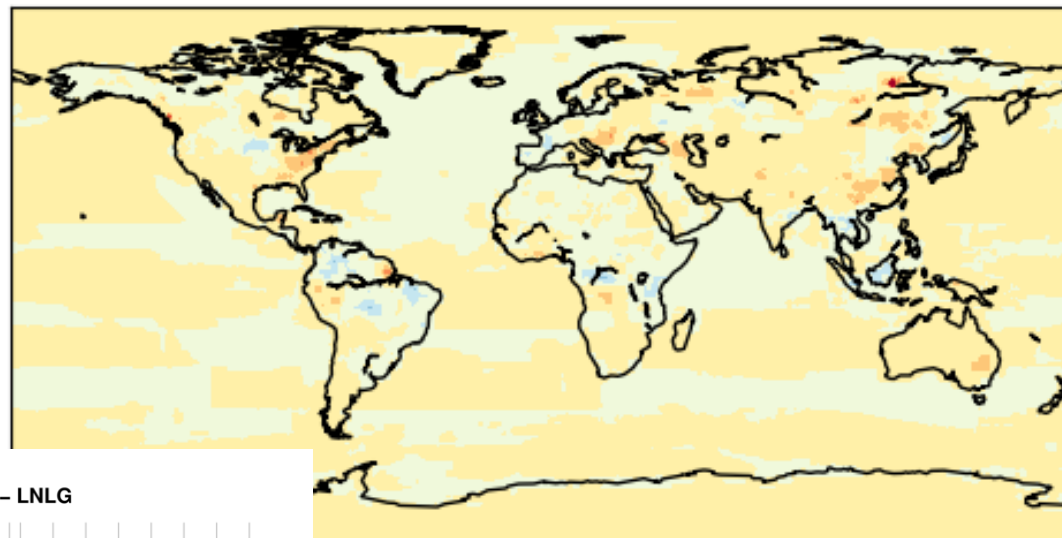Mean CO$_2$ Fluxes

Flux Uncertainties

Examples of Global Flux Maps

EnsMean: LN Land 2018 Annual Flux

EnsMean: LN Net 2018 Annual Flux Anomaly

Mean CO$_2$ Fluxes

Flux Uncertainties

Amazonia – LNLG