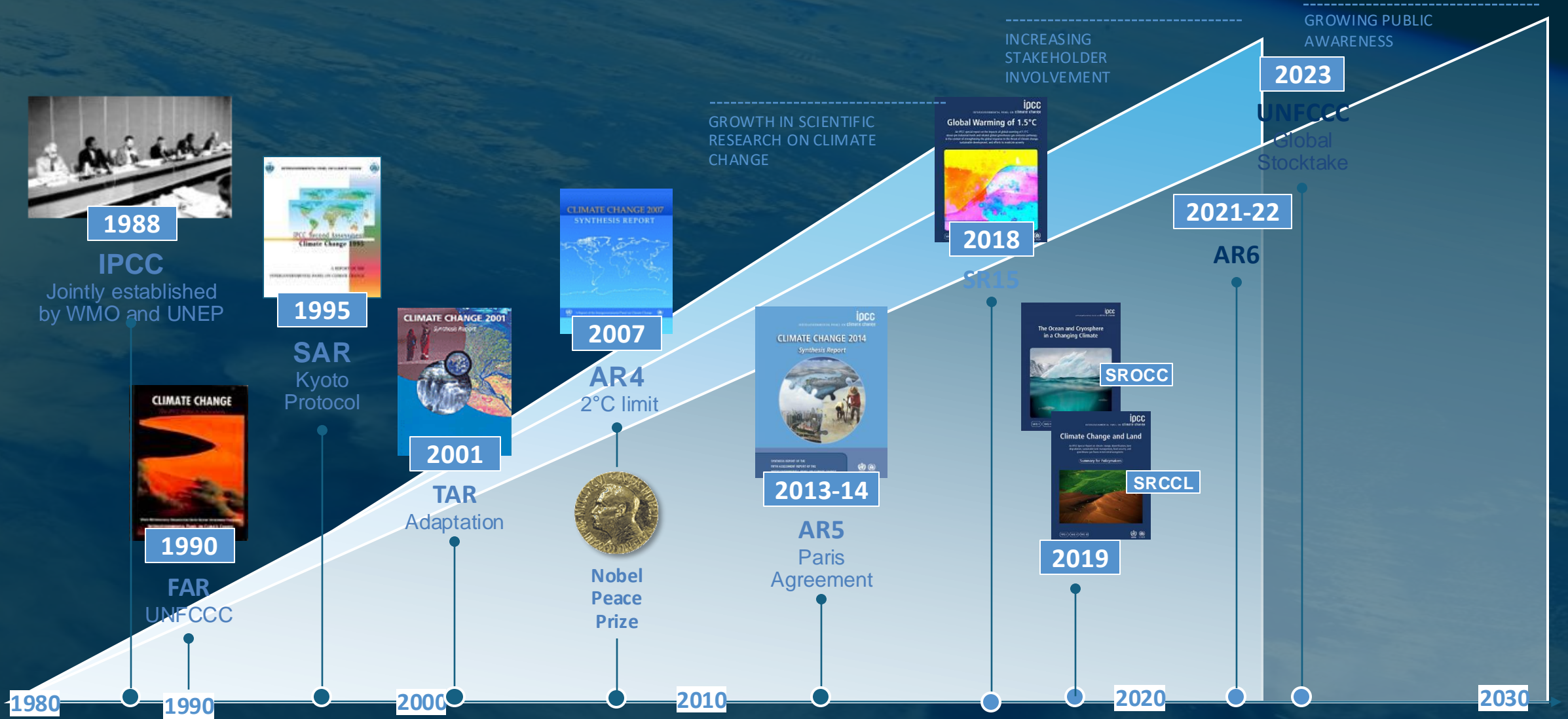


Ice Sheets (Greenland) Aerosol Sea State
Sea Surface Temperature Snow
Soil Moisture Permafrost **Glaciers** Cloud Lakes
RECCAP-2 Ocean Colour Sea Level
Greenhouse Gases Sea Level Budget Closure
Ozone Land Cover CMUG Sea Ice Ice Sheets (Antarctic)
Sea Surface Salinity Biomass Fire

CCI CONTRIBUTION TO IPCC

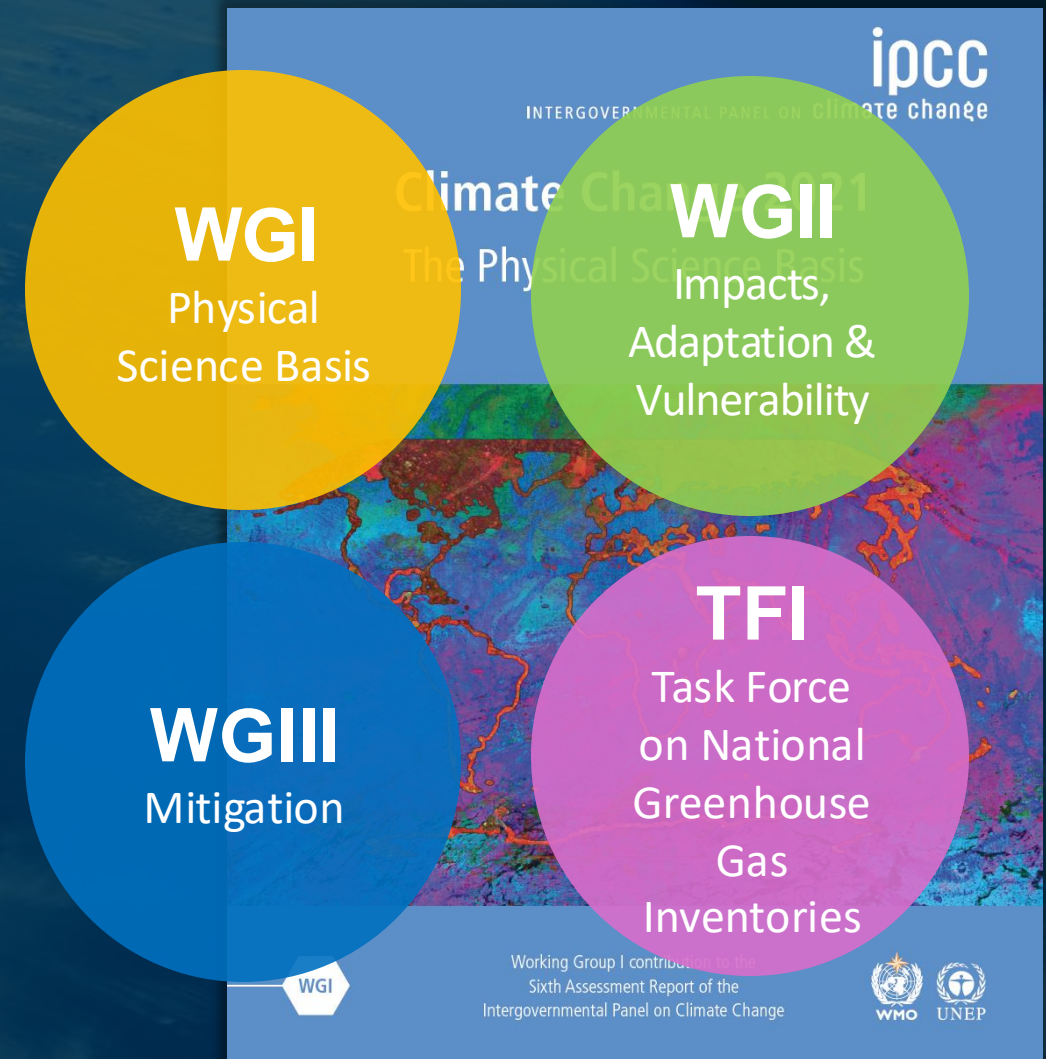
CLIMATE CHANGE INITIATIVE MID-TERM REVIEW

IPCC history



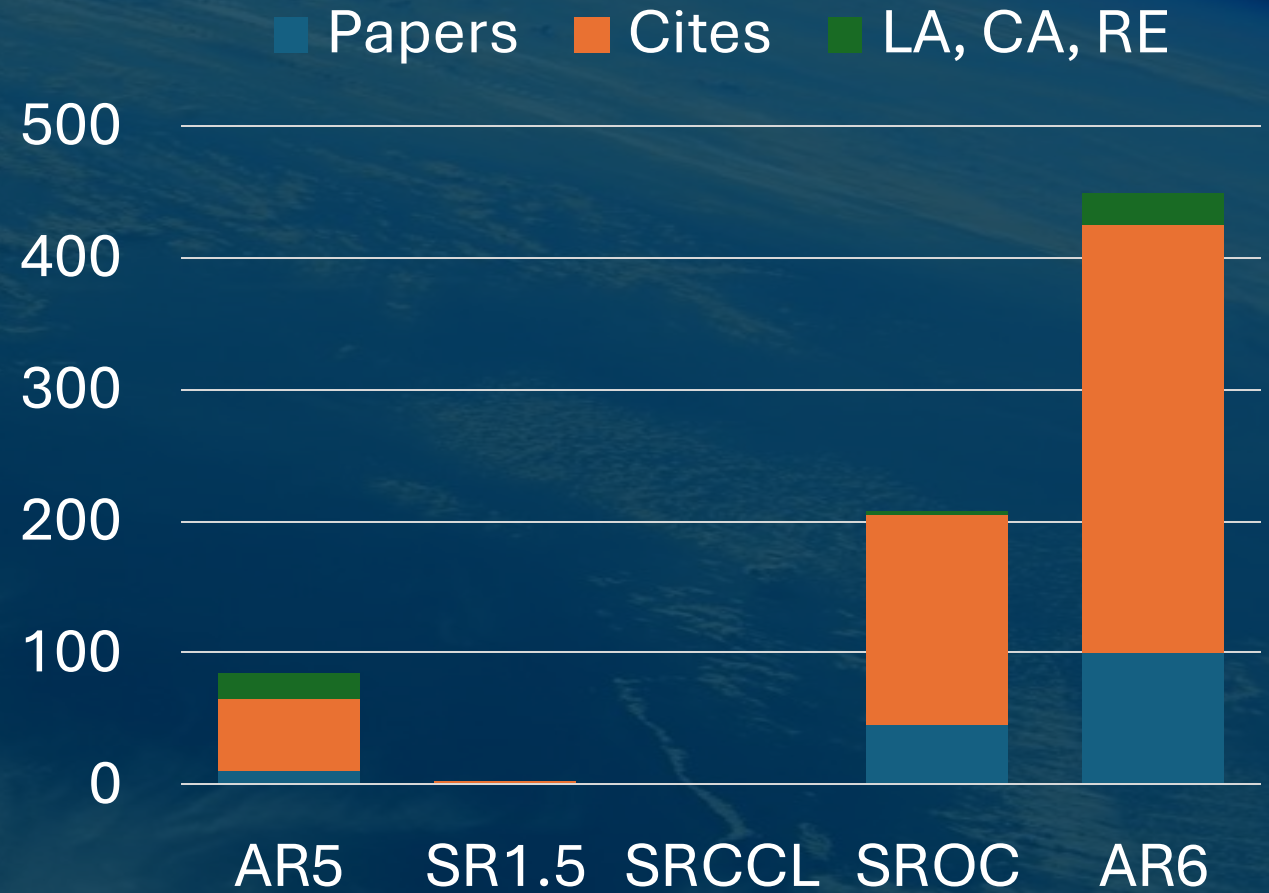
IPCC structure

- 195 member states
- 3 working groups + task force on GHGI
- Latest report, AR6, published in 2021
- 234 authors from 60 countries
- 14,000 publications cited
- Focus on 1.5 °C, human influence, regional change, extreme events



CCI × IPCC

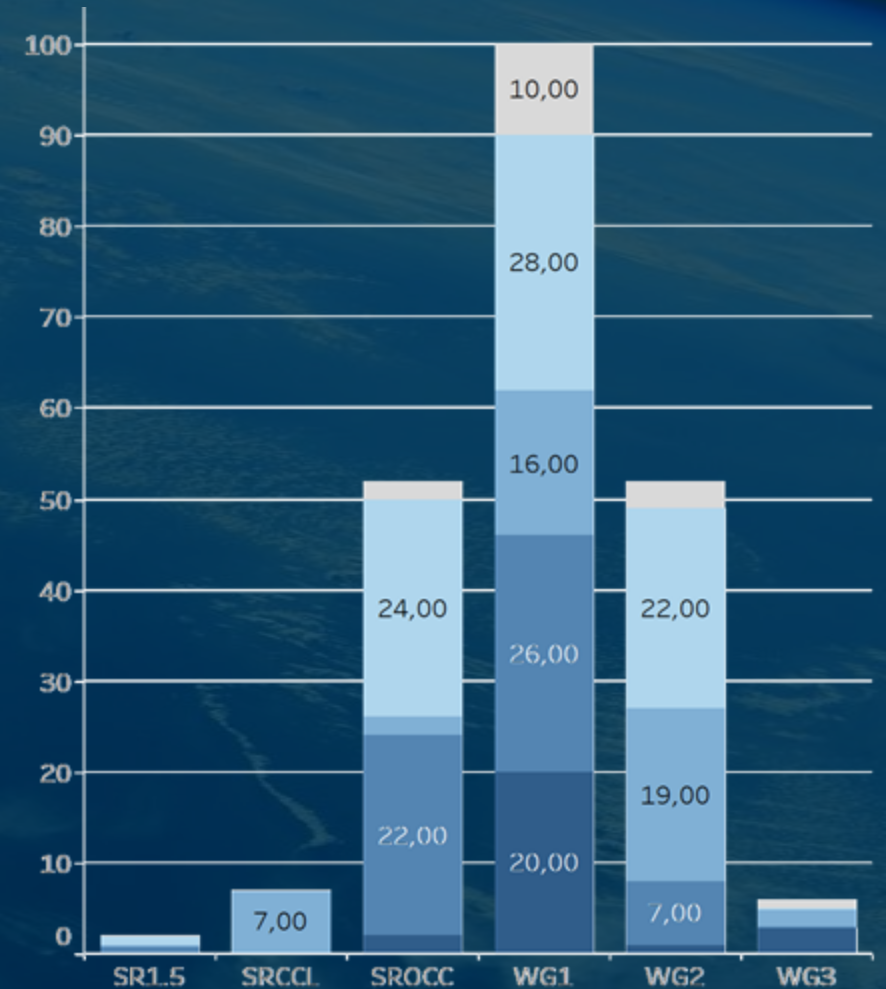
- CCI involvement in IPCC has tripled over time
- AR5 saw <100 appearances
- A66 saw >300 appearances
- Includes 7 lead/coordinating authors, and 14 authors



CCI × AR6

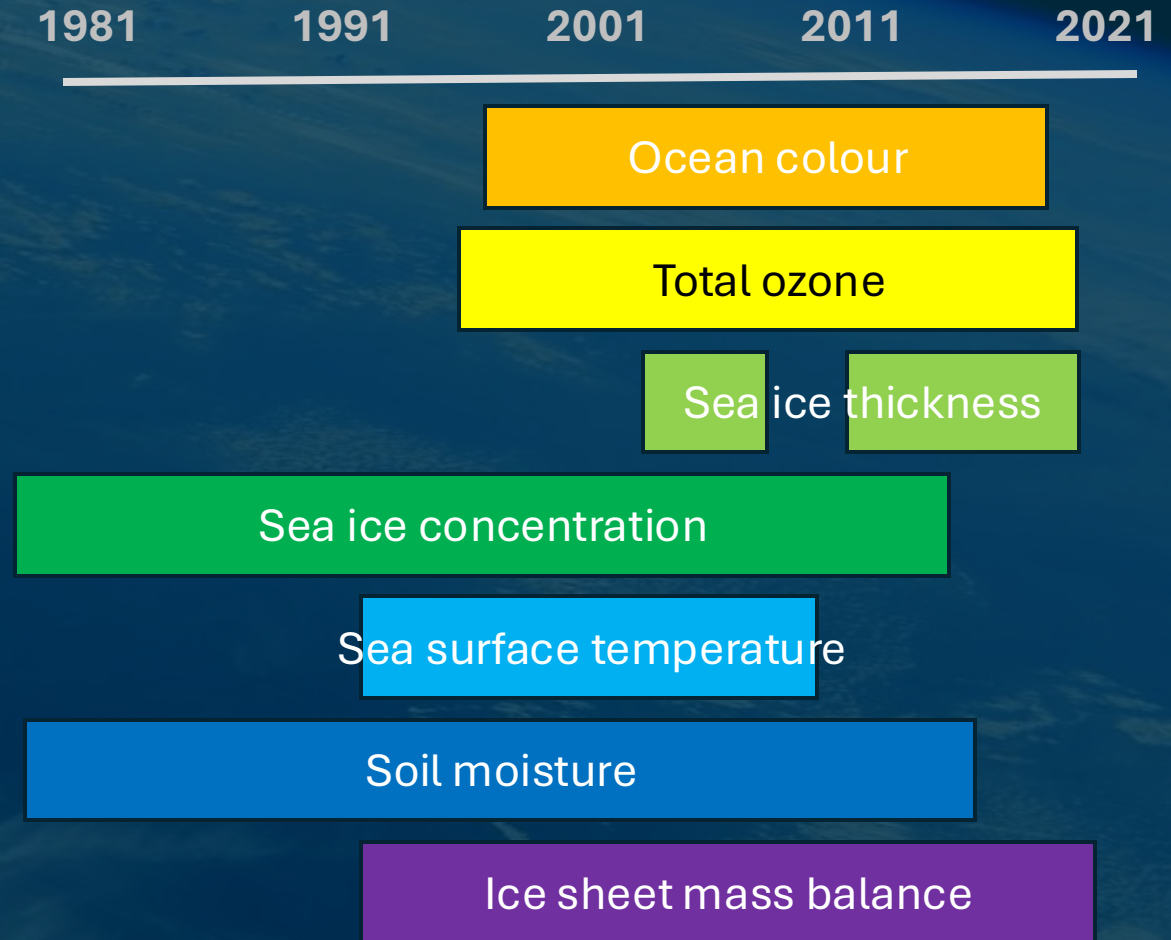
- 21 CCI projects cited in AR6
- Glaciers, Ocean Colour, Sea Level most cited
- WG1, WG2, and SROC cite the most CCI papers
- All WG1 chapters, esp. 1 (Framing), 2 (Status), and 9 (Oceans, Cryosphere, Sea Level)
- Most WG2 chapters, esp. 2 (Land) and 3 (Ocean)
- All SROC chapters, esp. 4 (Sea level), 3 (Polar), and 2 (High Mountains)

Modelling Ocean Land Cryosphere Atmosphere



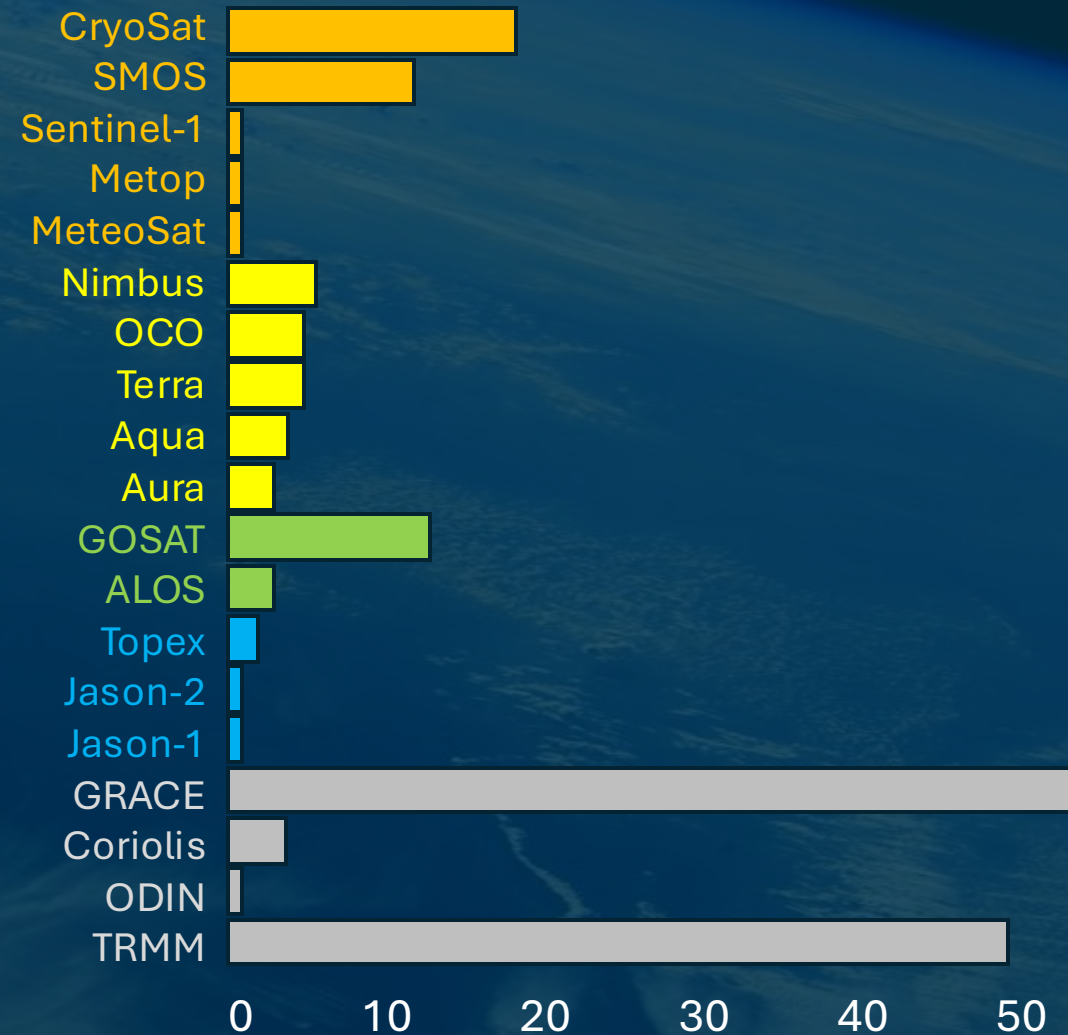
CCI data × AR6

- WG1 uses 8 CCI datasets from 6 CCI projects
- Including 3 from CCI Sea Ice
- WG1 chapter 9 “acknowledge the contribution of the IMBIE Team. Their valuable input and advice have significantly improved the chapter”



CCI satellite × AR6

- WG1 make use of data from 19 satellites included in CCI CDRs
- 5 ESA, 5 NASA
- GRACE, TRMM, and CryoSat are the most frequently mentioned



High impact CCI papers in AR6



Global Carbon Budget

- Community assessment of emissions, land, atmosphere, and ocean CO₂
- 85 participants, 18 countries
- 165k views, 2736 altmetrics, 1662 citations



IMBIE

- Community assessment of ice sheet mass balance
- 97 participants, 13 countries
- 85k views, 6653 altmetrics, 1161 cites



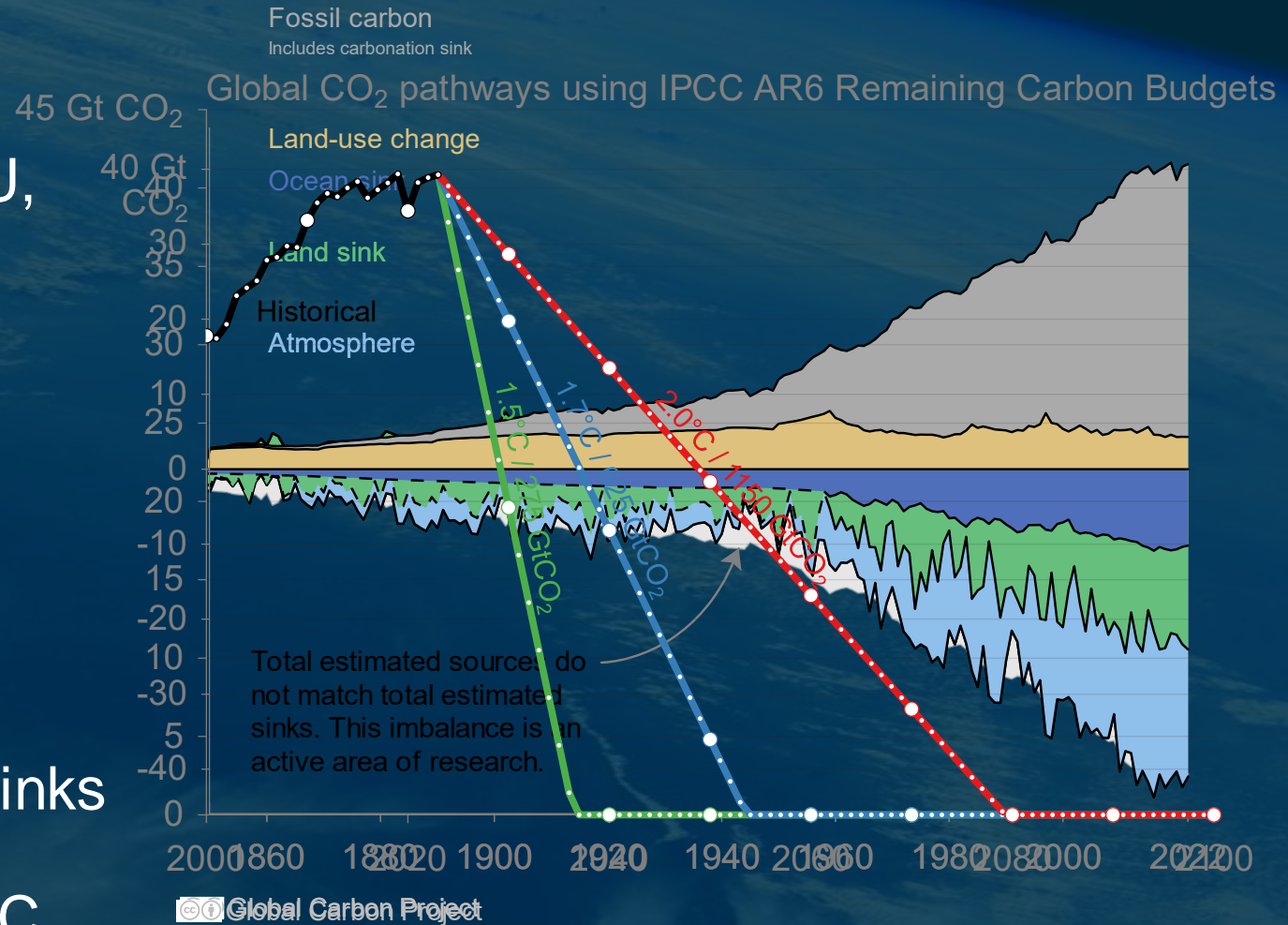
Earth's ice imbalance

- Global survey of ice sheet, glacier, sea ice, and ice shelf mass loss
- All but SO sea ice from EO
- 66k views, 3048 altmetrics, 138 cites



Global carbon budget

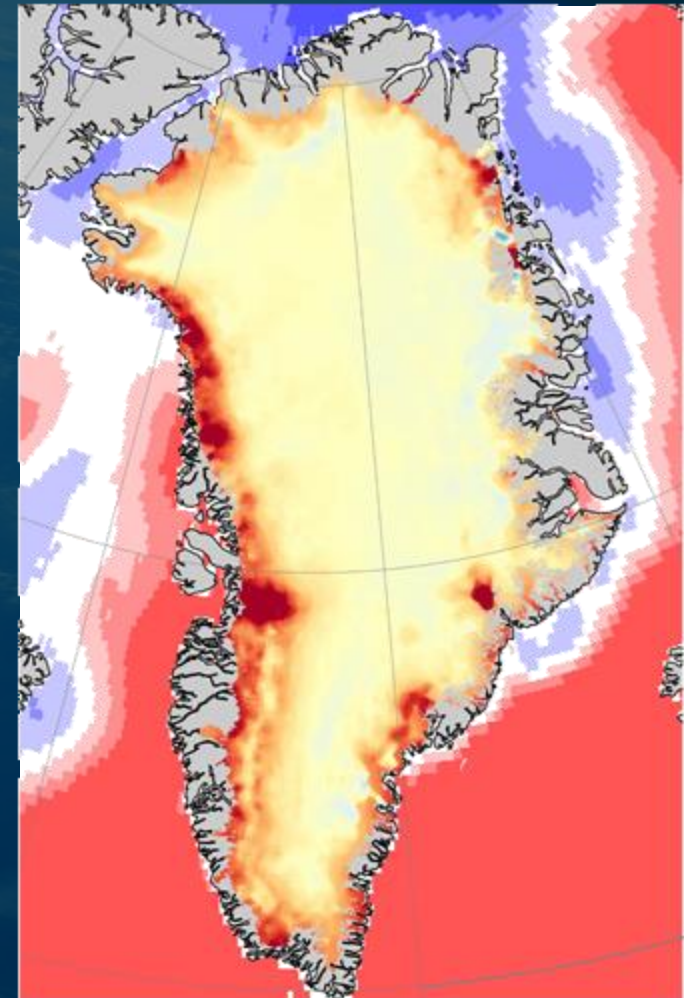
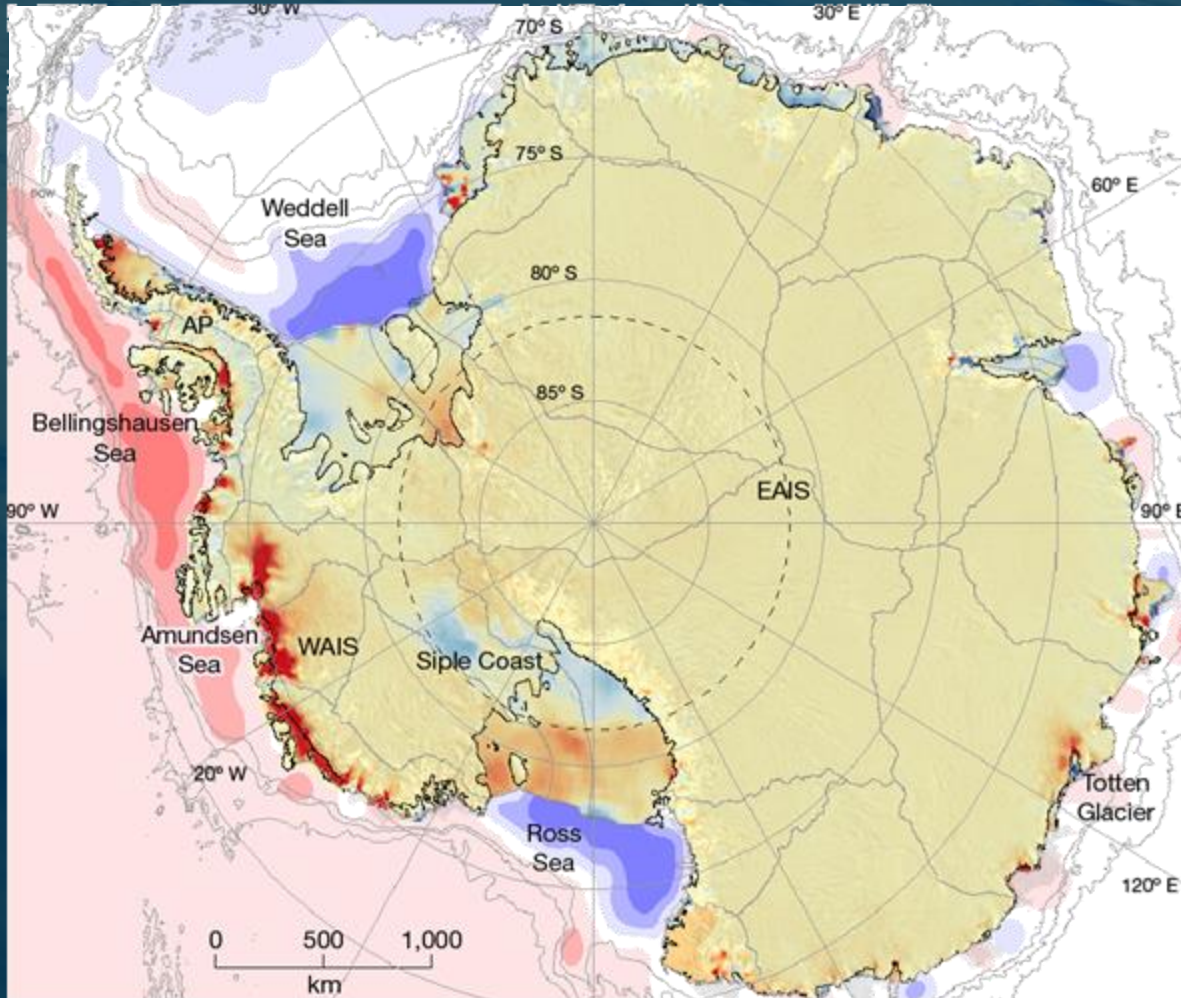
- CO2 emissions up 63% over 1990
- 67% are from China, USA, India, EU, Russia, and Japan
- 94% are from coal, oil, and gas
- Land emissions are declining, but deforestation still 2.2 x reforestation
- 4% imbalance between sources & sinks
- 7, 15, and 28 years to +1.5, 1.7, 2.0C



IMBIE

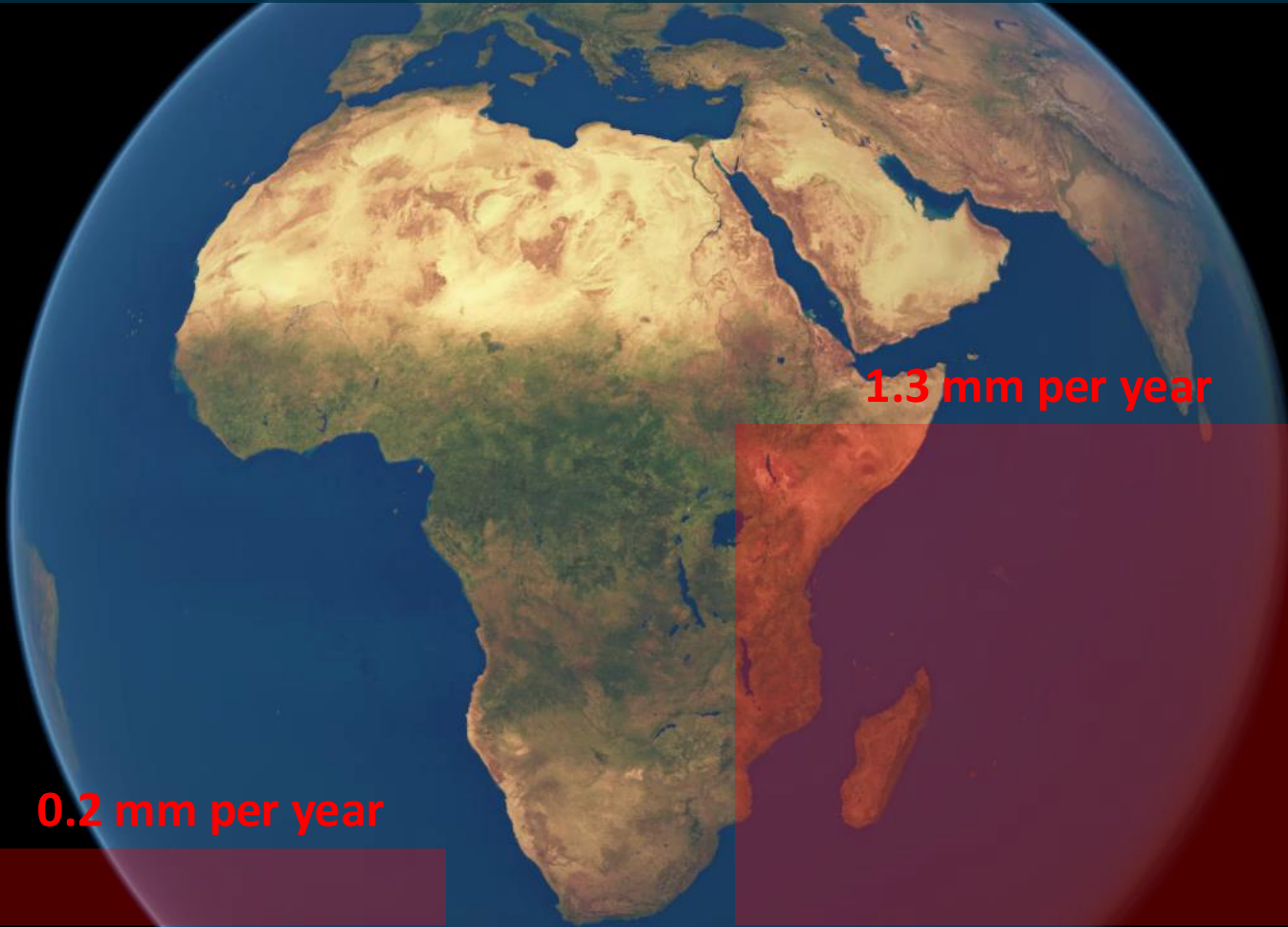


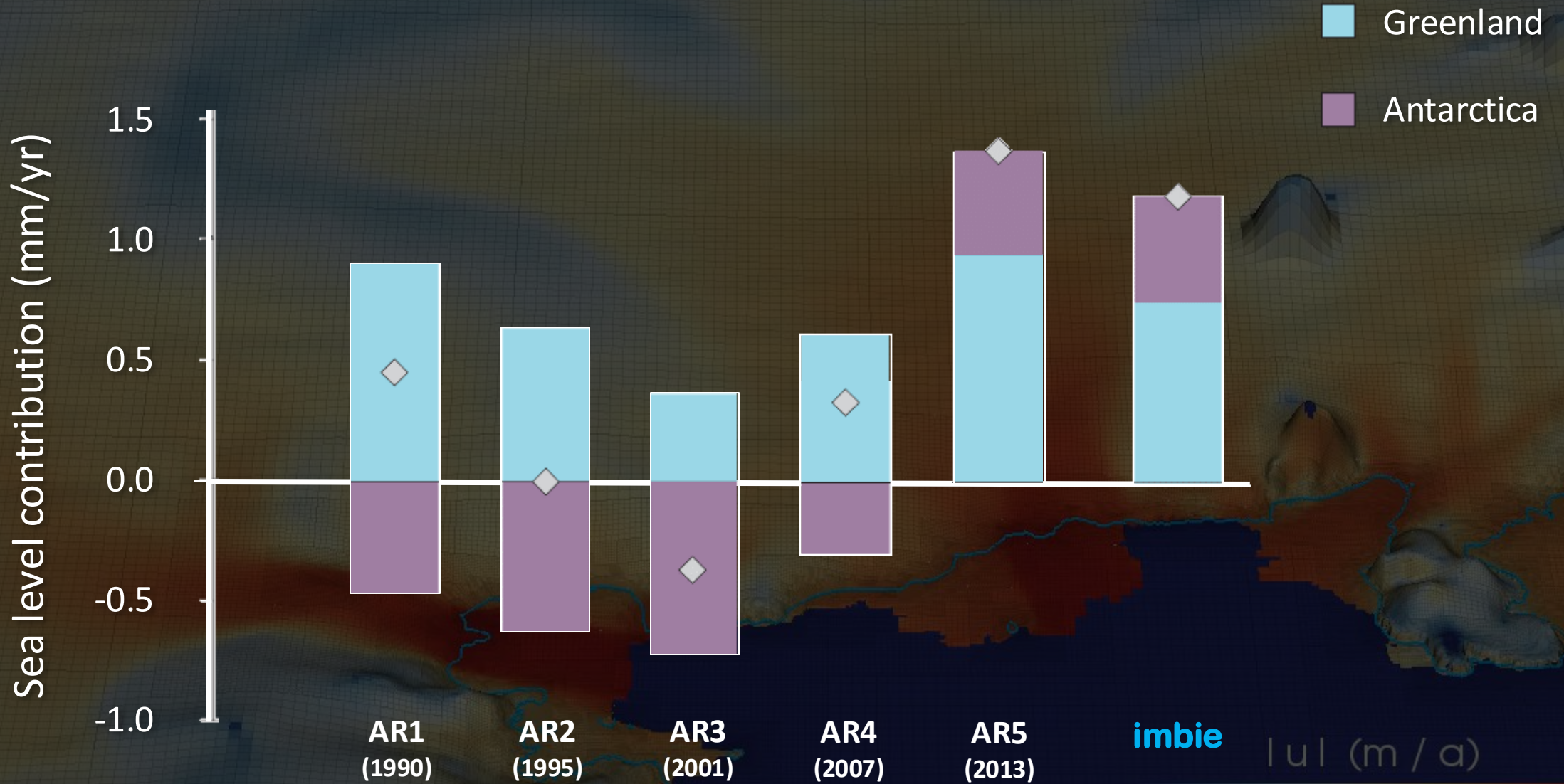
→ THE EUROPEAN SPACE AGENCY



Elevation change (m/yr)





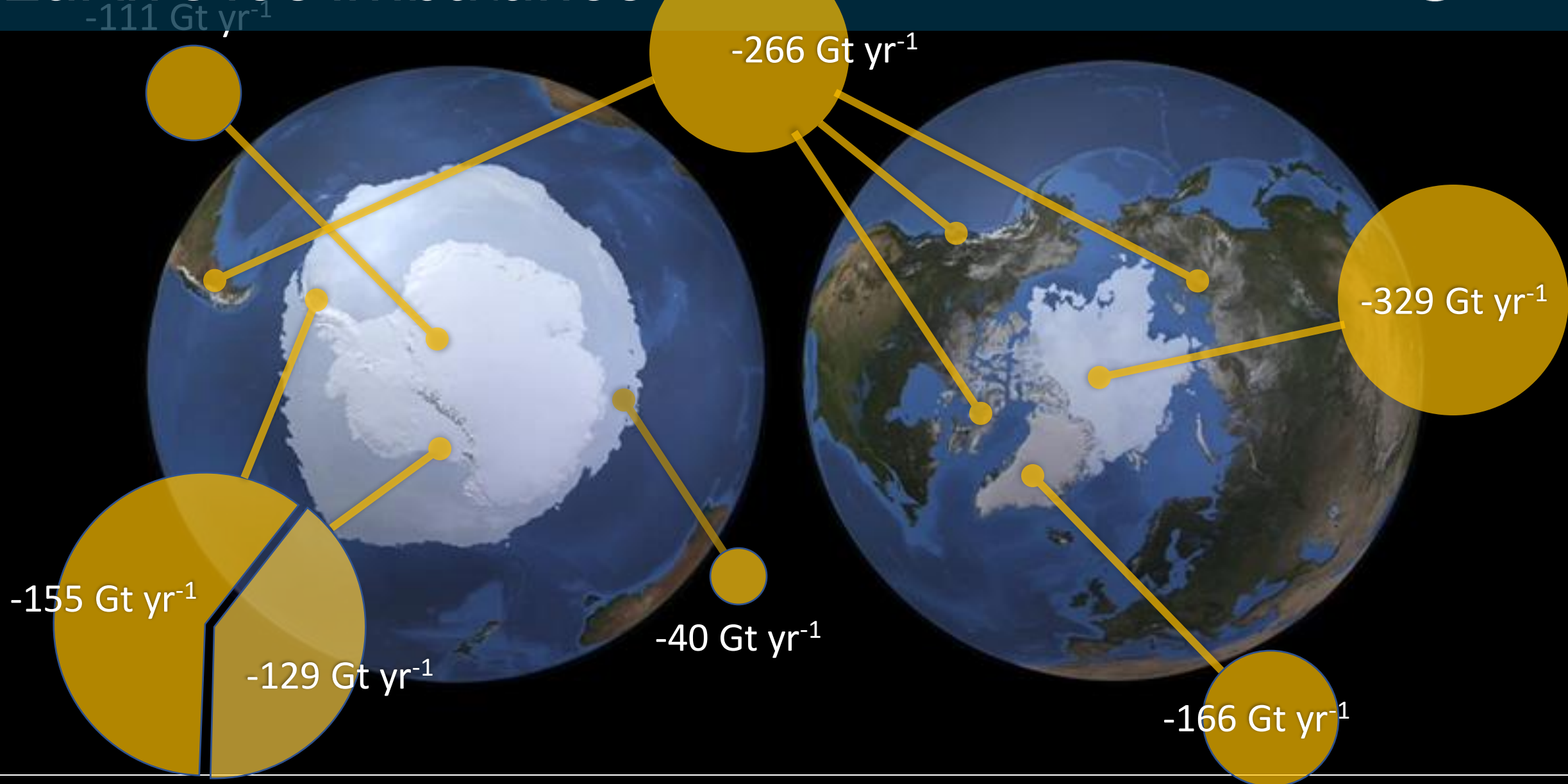


IMBIE



→ THE EUROPEAN SPACE AGENCY

Earth's ice imbalance



Earth's ice imbalance

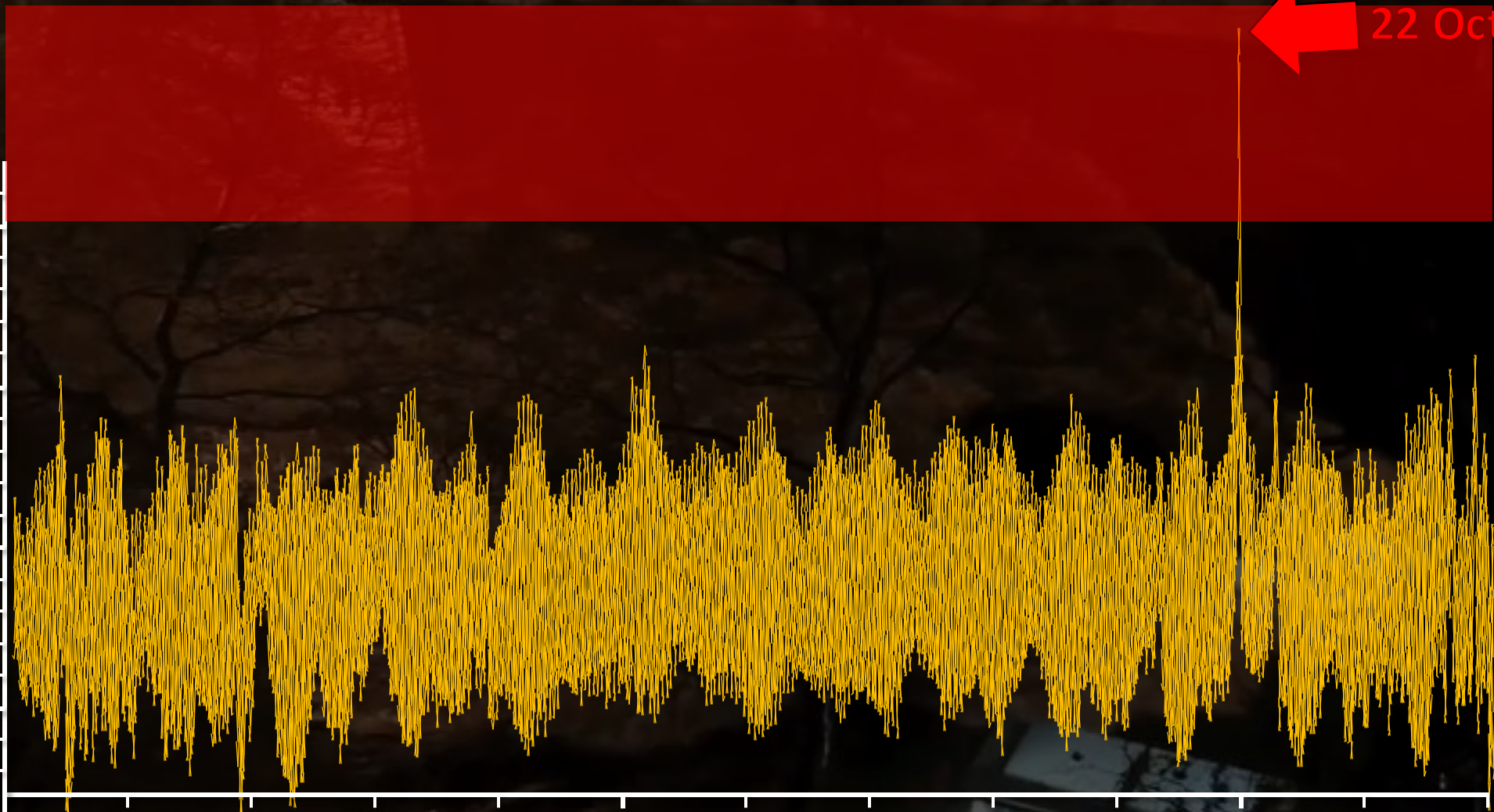


Earth's ice imbalance



New York
Water Level

3.0 m
2.0 m
1.0 m
0.0 m



22 Oct 2012

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



Knowledge gaps

- CO2 emissions up 63% over 1990
- Observations in the global south, coastal zones
- CCI has supported AR6 with ~200 papers cited, ~500 times
- 7, 15, and 28 years to +1.5, 1.7, 2.0C
- oceans and polar regions
- CCI has contributed to all six AR6 reports in all projects
- Sixfold increase in ice sheet melting since 1990's
- Carbon, nitrogen, and methane cycles
- CCI papers support 85 of the 99 WG1 SPM statements
- Earth is losing one trillion tons of ice per year
- Drought and soil moisture
- CCI papers mainly supported WG1 (85), WG2 (48), WG3 (16)
- Tracking IPCC's worst-case scenario
- Ice sheet tipping points
- WG1 uses 8 CCI datasets from 5 projects
- Raises flood risk to 400 million people
- Aerosols & VOCs in urban environments

