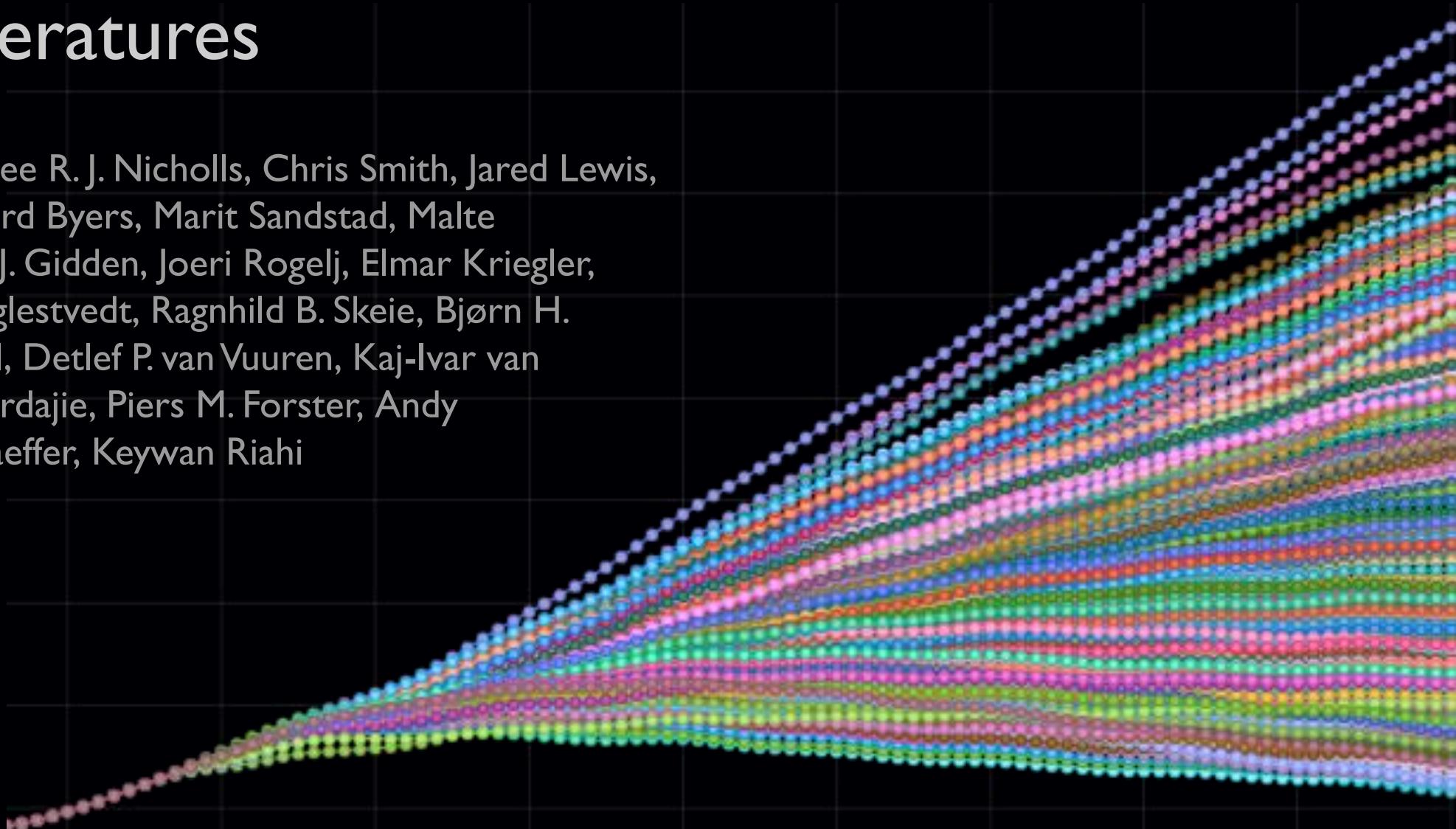


# The IPCC Sixth Assessment Report WGIII climate assessment of mitigation pathways: from emissions to global temperatures

Jarmo S. Kikstra, Zebedee R. J. Nicholls, Chris Smith, Jared Lewis,  
Robin D. Lamboll, Edward Byers, Marit Sandstad, Malte  
Meinshausen, Matthew J. Gidden, Joeri Rogelj, Elmar Kriegler,  
Glen P. Peters, Jan S. Fuglestvedt, Ragnhild B. Skeie, Bjørn H.  
Samset, Laura Wienpahl, Detlef P. van Vuuren, Kaj-Ivar van  
der Wijst, Alaa Al Khourdajie, Piers M. Forster, Andy  
Reisinger, Roberto Schaeffer, Keywan Riahi

Dr Chris Smith  
University of Leeds  
23 November 2023



Emission scenario A

Emission scenario B

Emission scenario C

Submitted global emissions pathway database  
(AR6DB)

# of scenarios 3131

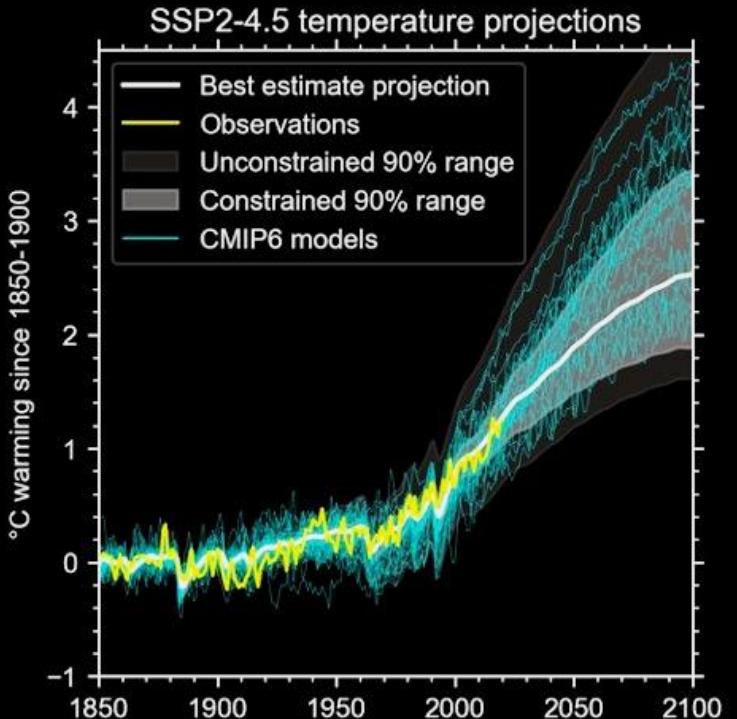
**Vetting:** Quality and completeness verification  
of input data

1683

**Harmonization** of emissions pathways (aneris  
0.3.1)

1202

**Infilling** (silicene 1.2.1) of emissions species  
not reported



**Emissions-driven probabilistic  
climate model emulators**

- MAGICC 7.5.3
- fair 1.6.2
- CICERO-SCM

# Climate categorization

C1:  $1.5^{\circ}\text{C}$  with low or no overshoot

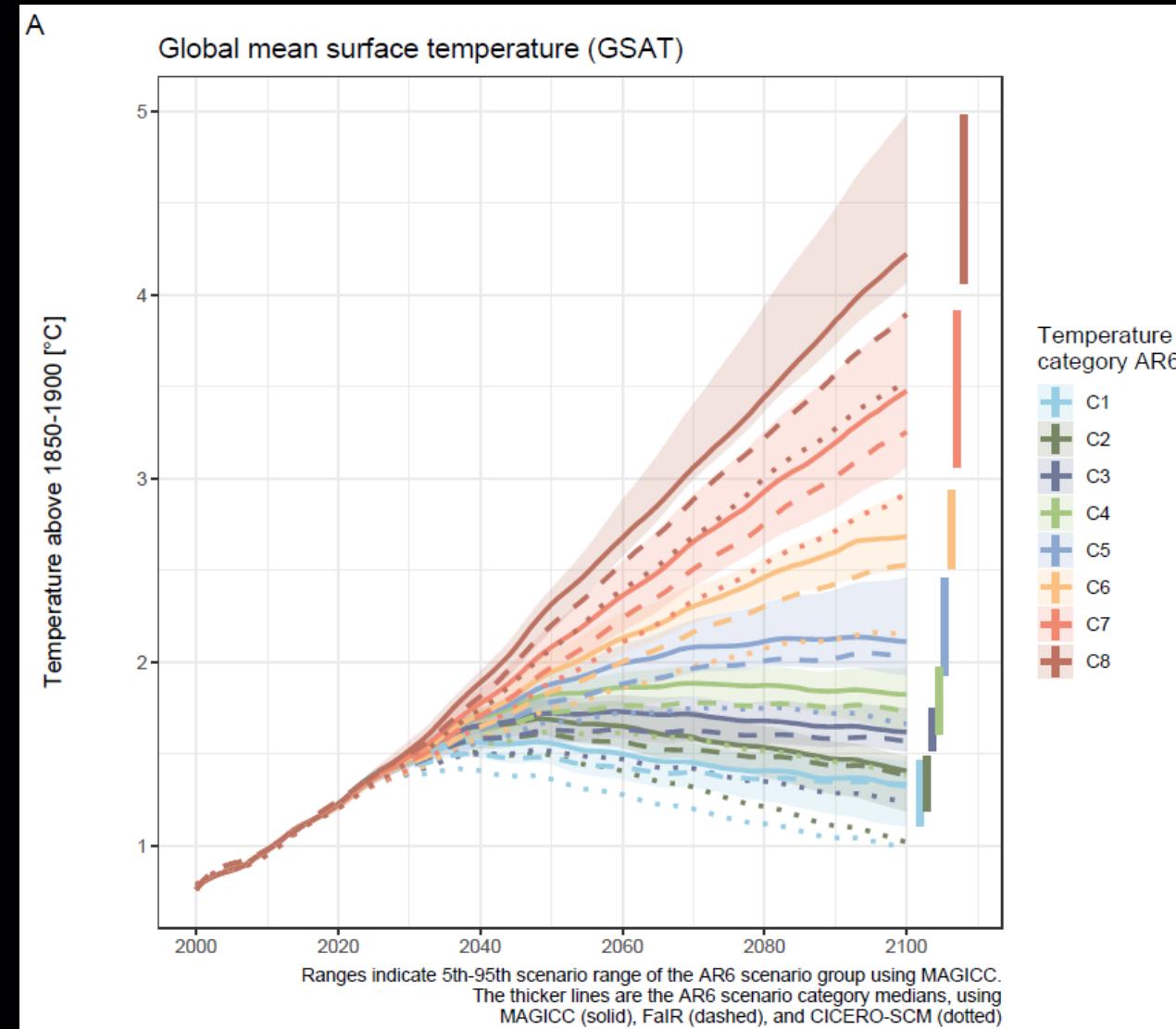
>33% chance of avoiding  $1.5^{\circ}\text{C}$  peak warming, 50% chance < $1.5^{\circ}\text{C}$  in 2100

C2:  $1.5^{\circ}\text{C}$  with high overshoot

50% chance < $1.5^{\circ}\text{C}$  in 2100

C3: “well-below”  $2^{\circ}\text{C}$

>67% chance < $2.0^{\circ}\text{C}$  in 2100



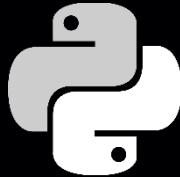
# An open source tool



[data.ene.iiasa.ac.at/ar6](http://data.ene.iiasa.ac.at/ar6)



[github.com/iiasa/climate-assessment](https://github.com/iiasa/climate-assessment)



`pip install climate-assessment`

Future extension: spatial climate information and regional impacts

The screenshot shows the homepage of the AR6 Scenario Explorer and Database. At the top, there's a navigation bar with links for Workspaces, Downloads, Documentation, License, About, and chrisroadmap. Below the header, a search bar says "Select an existing workspace or create a new one...". There are buttons for "Create new workspace", "Import", "Showing all workspaces", "Ordered by name", and "Enter to filter...". Three workspace cards are displayed: "1.5C Low or No OS Pathways (C1)" (red background), "AIM-Hub - key socioeconomic vari..." (light blue background), and "AIM-Hub - key technological vari..." (dark blue background). Each card has an "Open" button and a preview image.

