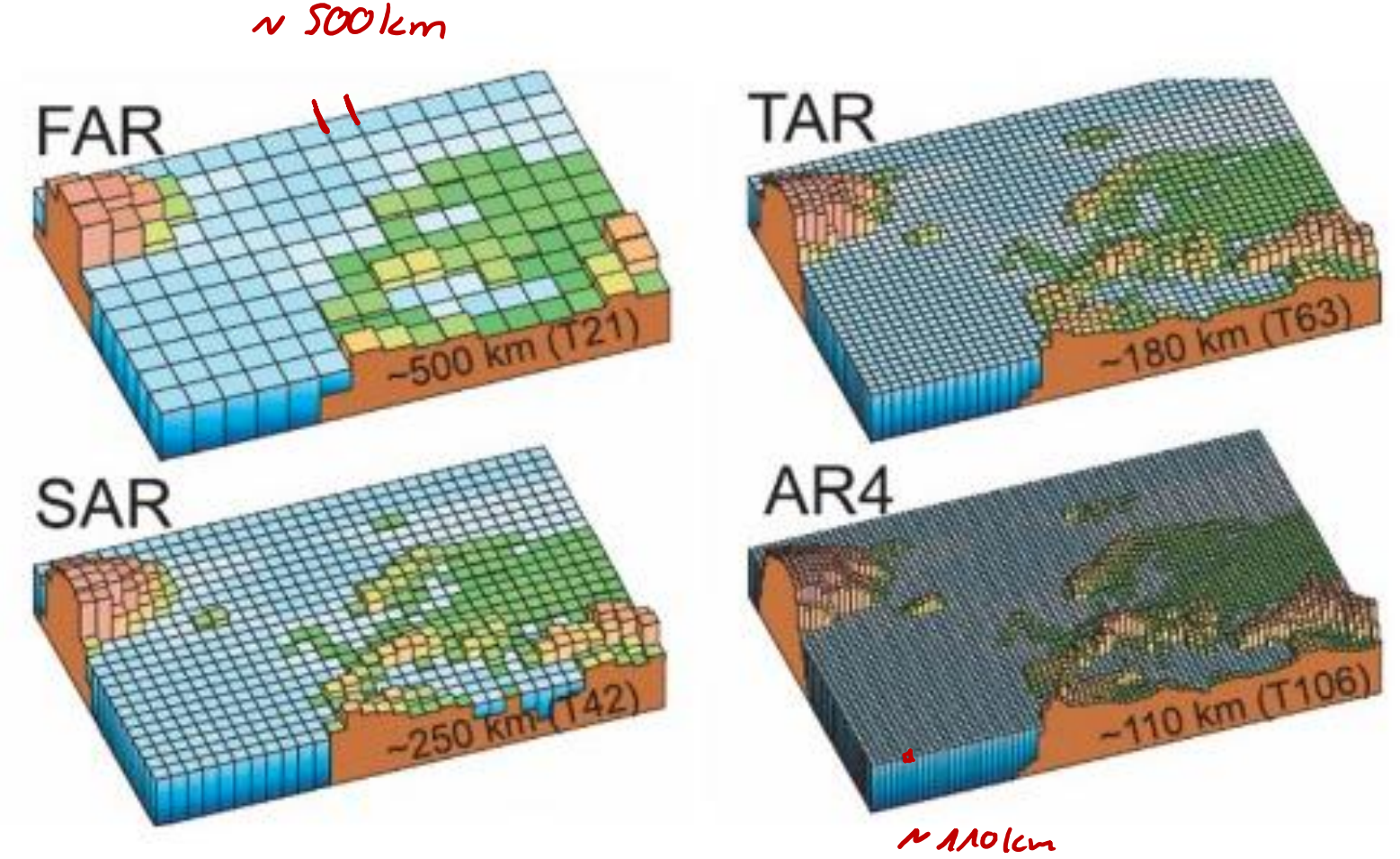
TECHNISCHE HOCHSCHULE
OSTWESTFALEN-LIPPE
UNIVERSITY OF
APPLIED SCIENCES
AND ARTS

Elektrotechnik und
Technische Informatik

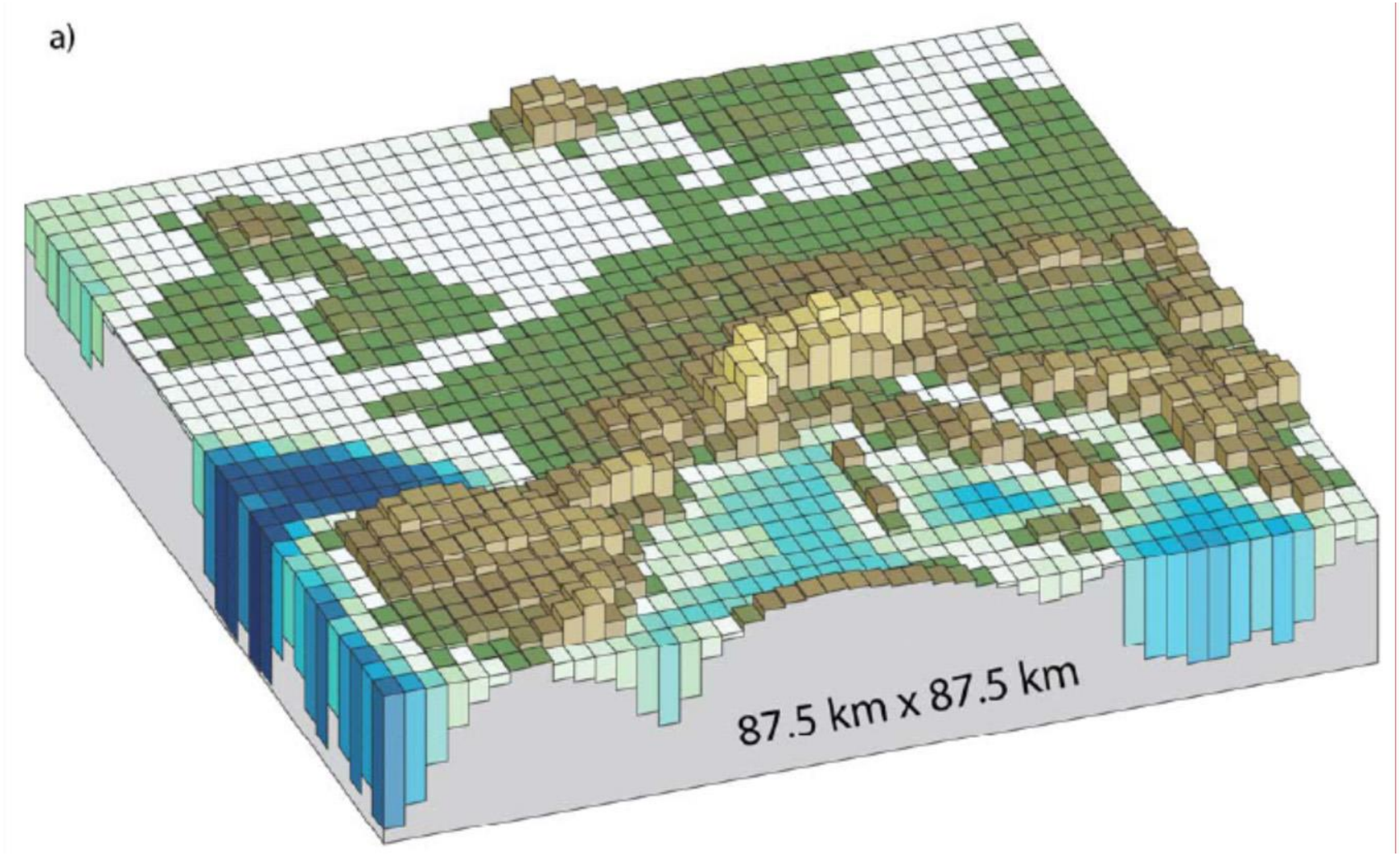
Klima & Energie

Prof. Dr. Johannes Üpping

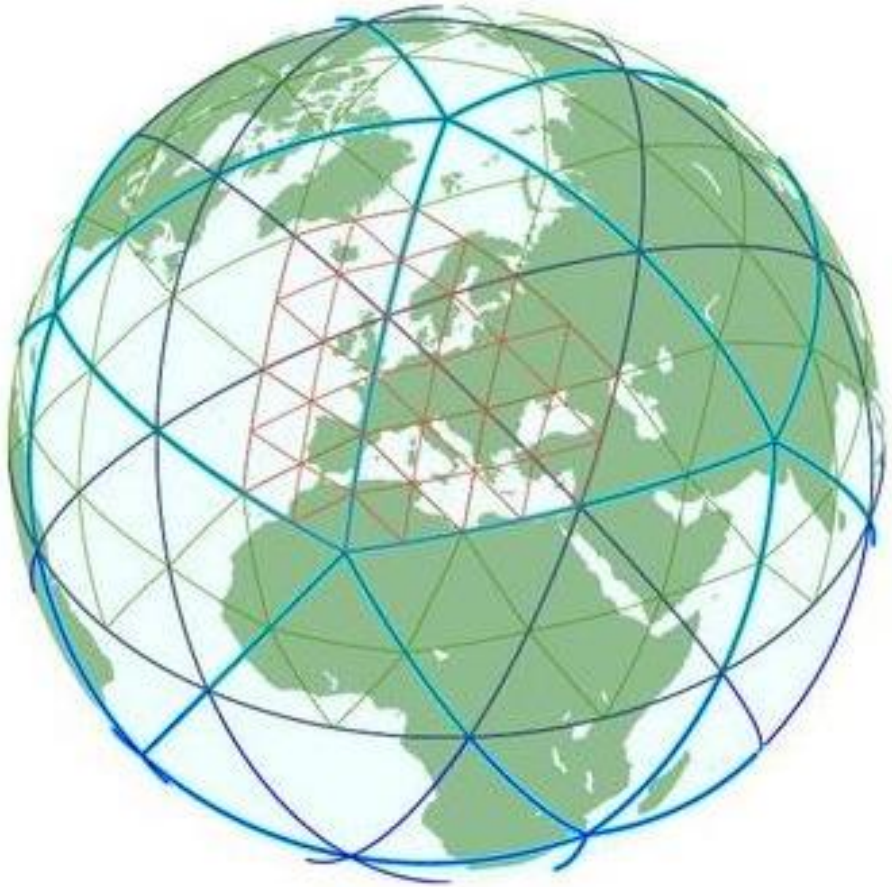
Klimamodelle



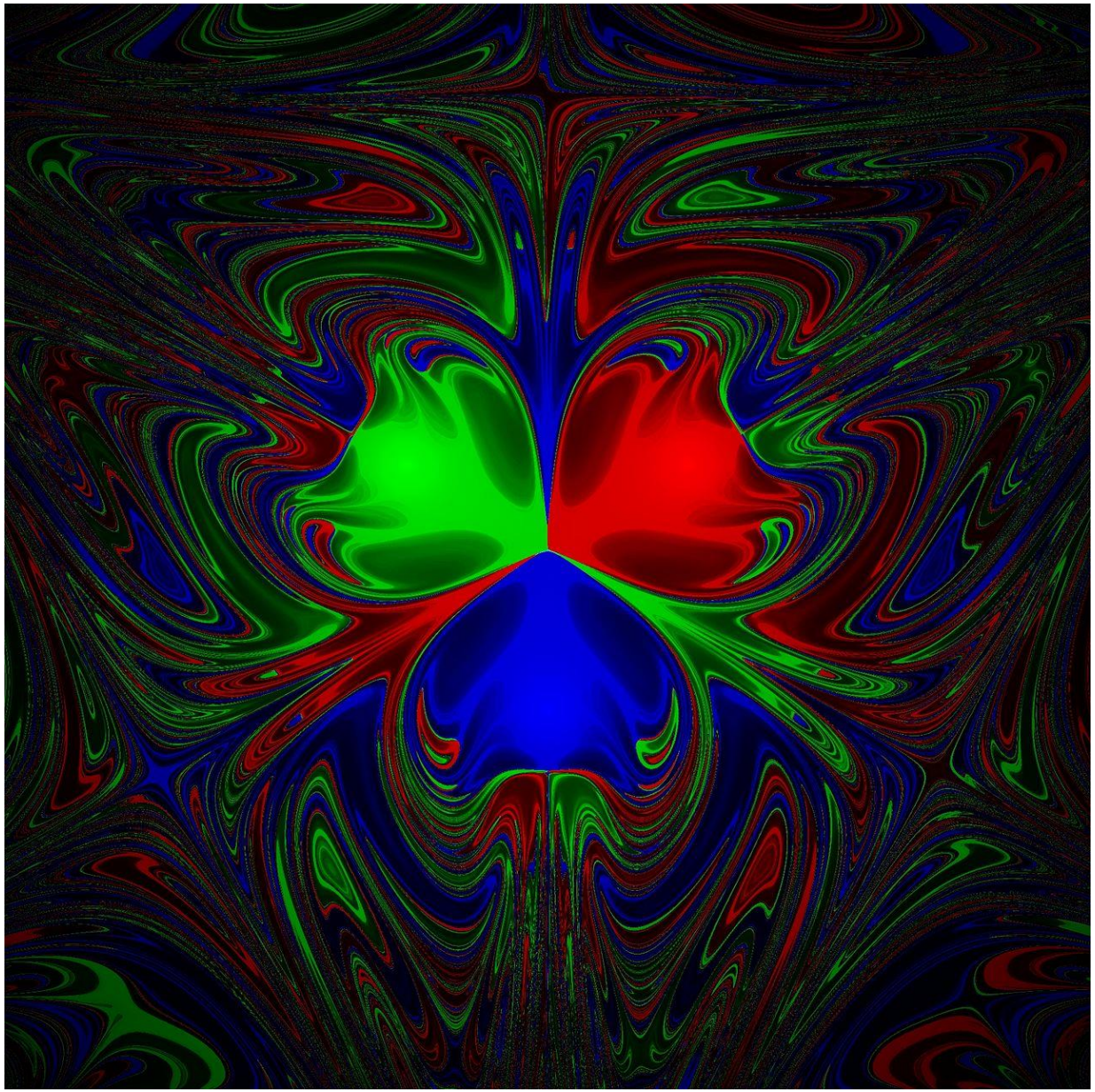
verändert nach IPCC (2007): Climate Change 2007, Working Group I: The Science of Climate Change, Figure 1.4
https://wiki.bildungsserver.de/klimawandel/index.php/Datei:Modellaufloesung.jpg

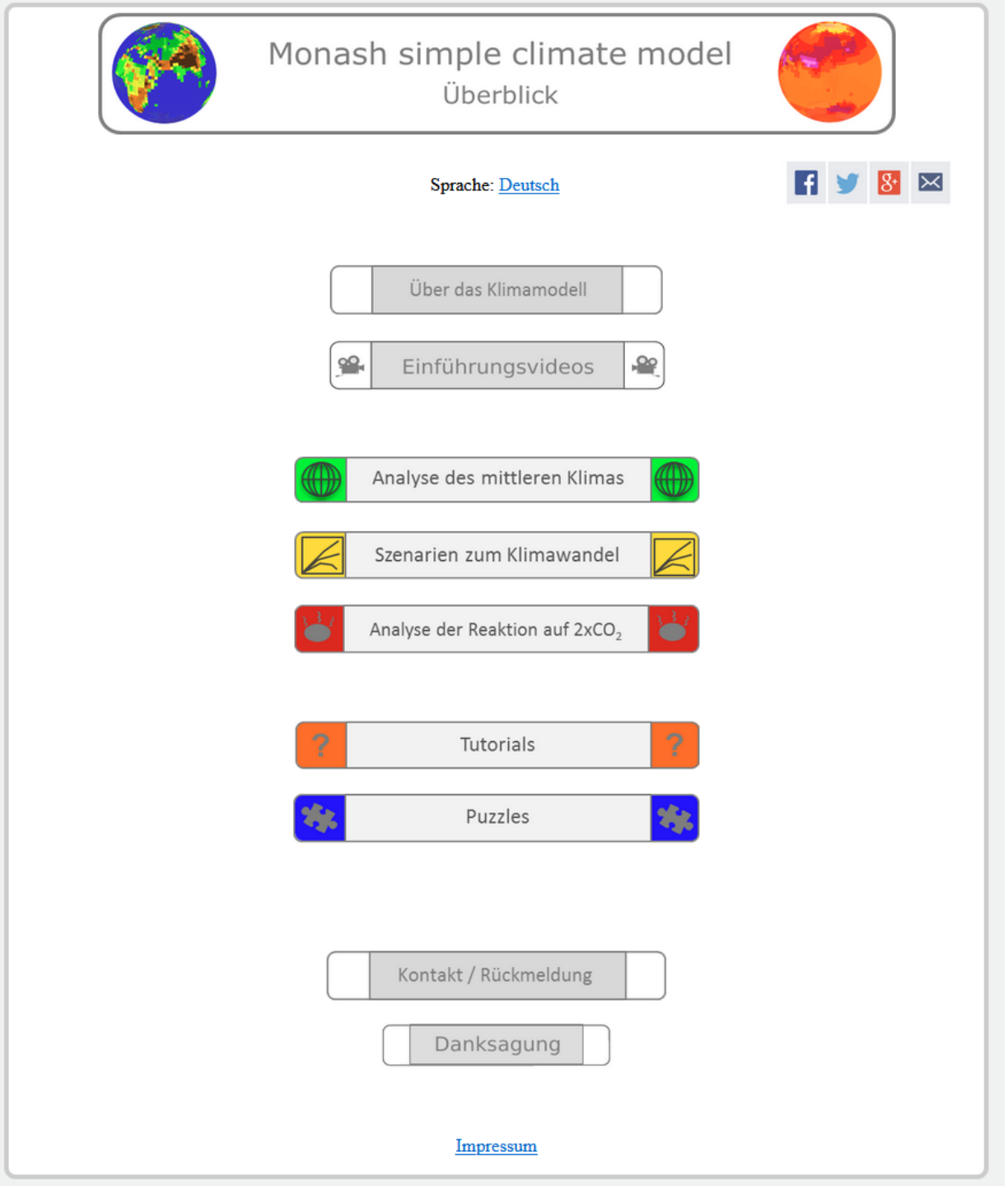


IPCC 2013, WGI, Figure 1.14; https://www.klimanavigator.eu/dossier/artikel/012808/index.php

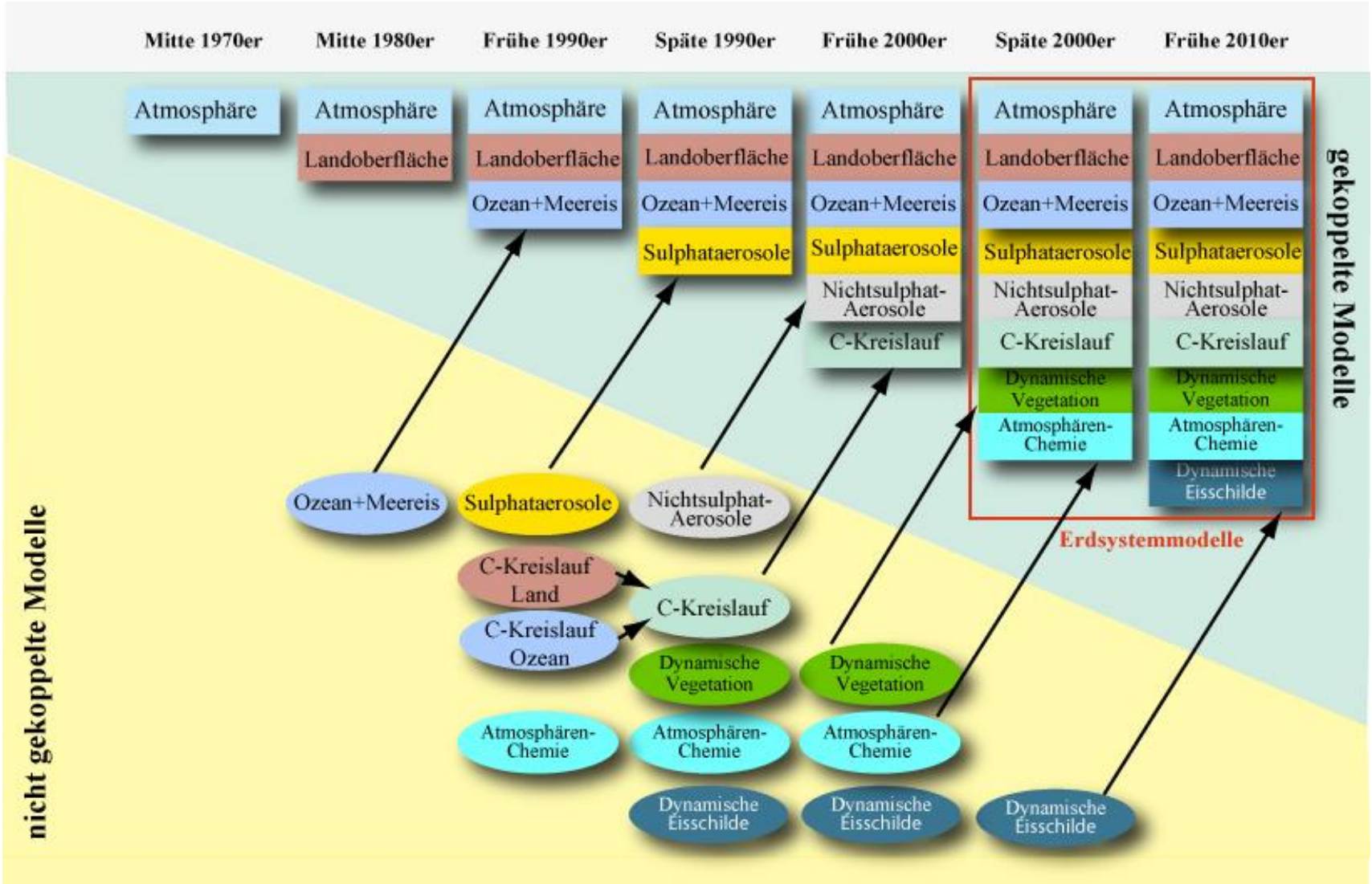


https://www.icon-model.org/icon_model

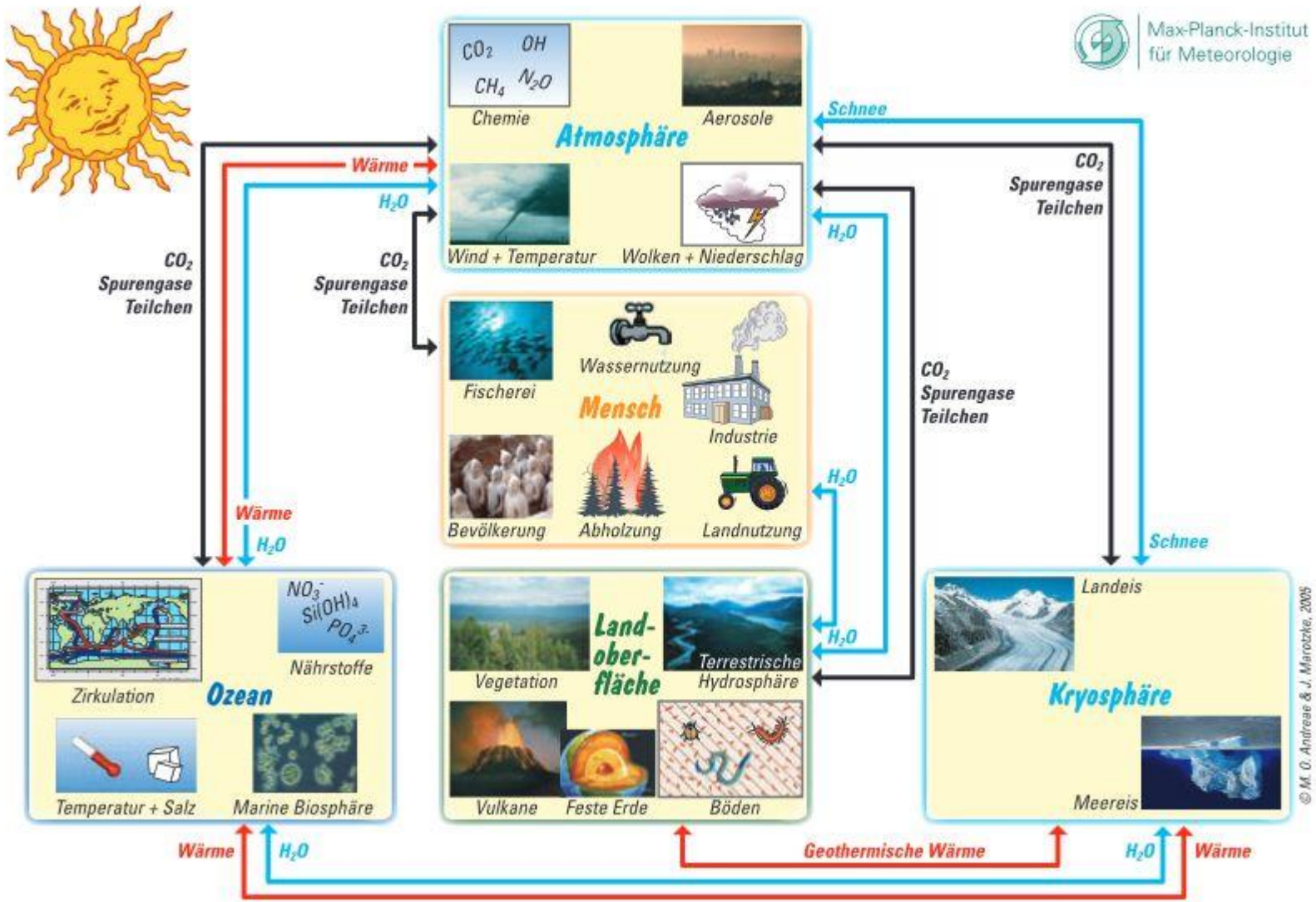




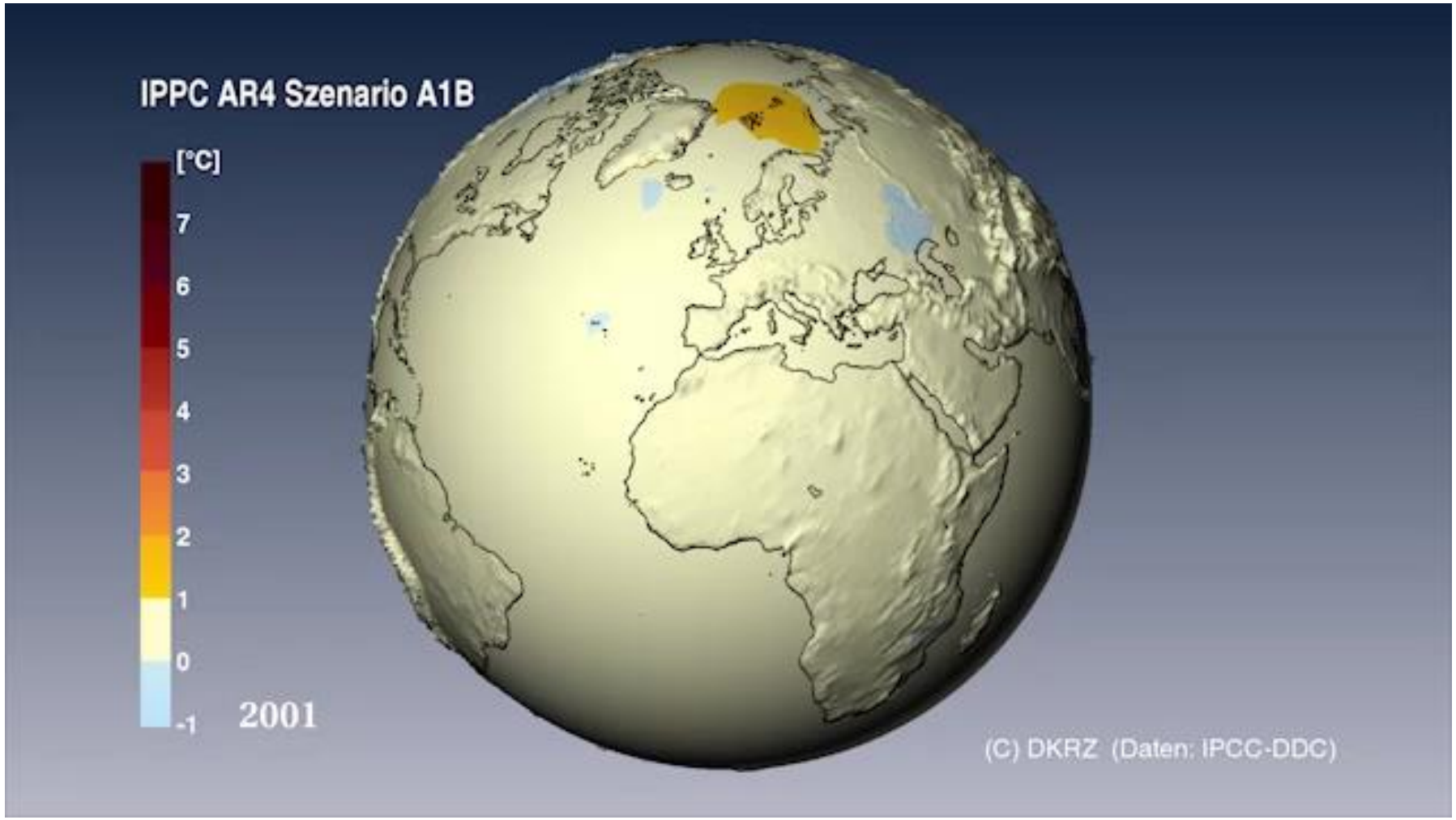
https://mscm.dkrz.de/overview_i18n.html?locale=DE



nach IPCC (2001): Climate Change 2001: The Scientific Basis. Summary for Policymakers and Technical Summary of the Working Group I Report, Cambridge 2001, Technical Summary, Box 3, Figure 1;
https://wiki.bildungsserver.de/klimawandel/upload/Modellentwicklung.jpg



MPI/DWD 2017; https://bildungsserver.hamburg.de/themenschwerpunkte/klimawandel-und-klimafolgen/klimawandel/erdsystem-modelle-746728


IPPC AR4 Szenario A1B
[°C]
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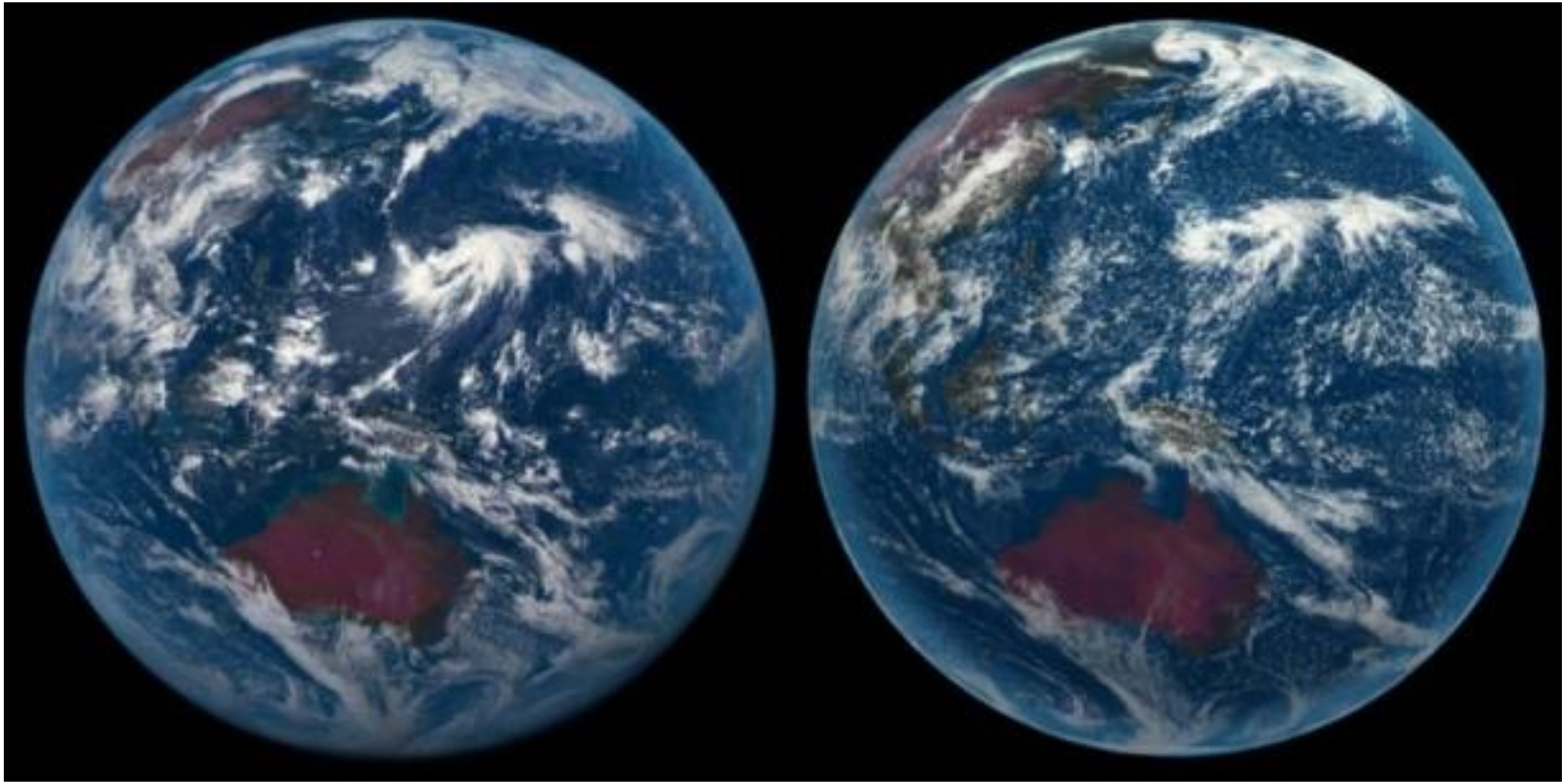
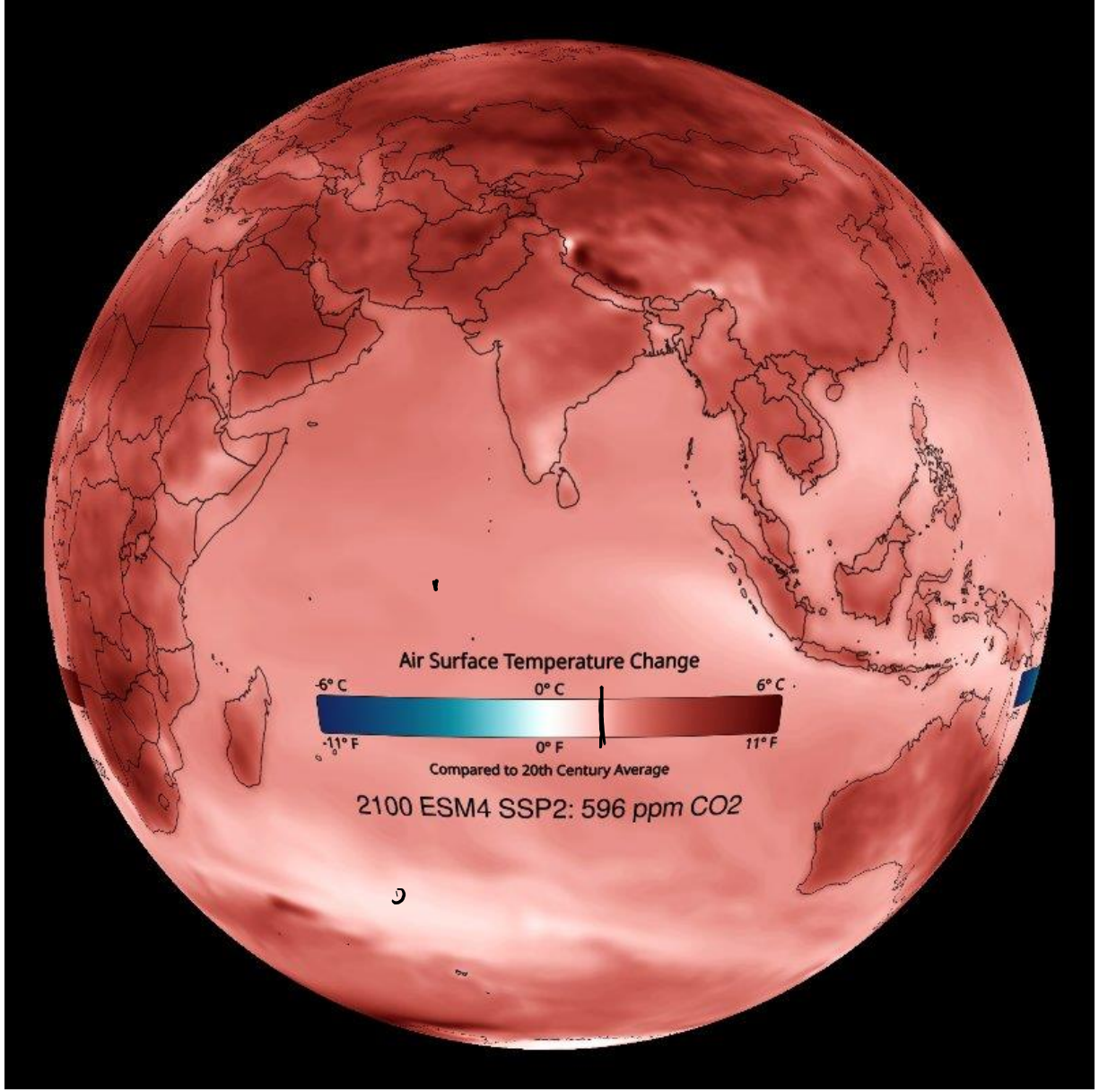
2001
(C) DKRZ (Daten: IPCC-DDC)



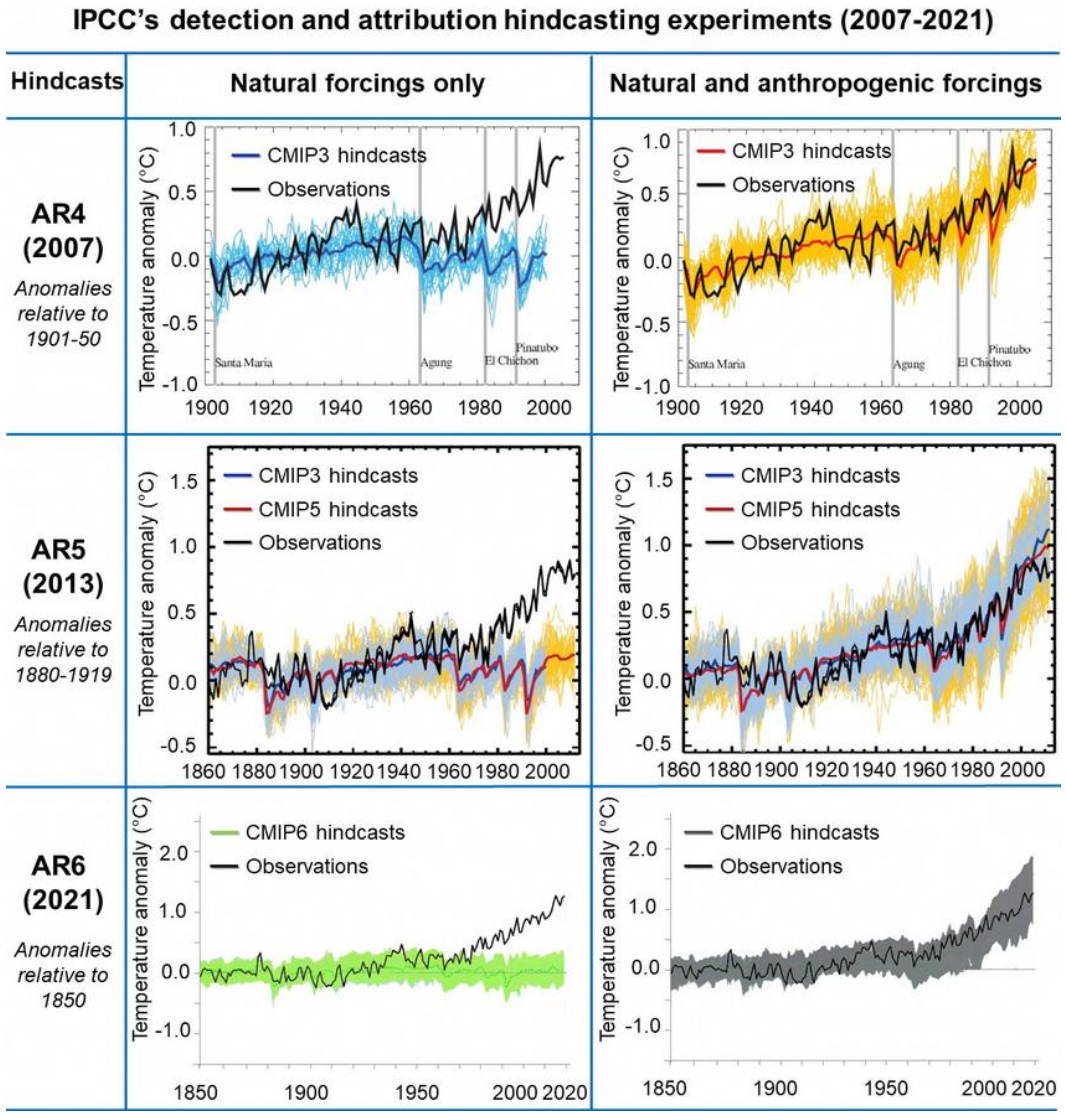
Wolkenbedeckung am 4.8.2016, aufgenommen durch den japanischen Wettersatelliten Himawari (links) und simuliert vom deutschen ICON-Modell (rechts) (Stevens, B. et al., 2019)



https://sos.noaa.gov/catalog/datasets/climate-model-surface-temperature-change-ssp2-middle-road-2015-2100/

Visualisierungen von Forschungsdaten:

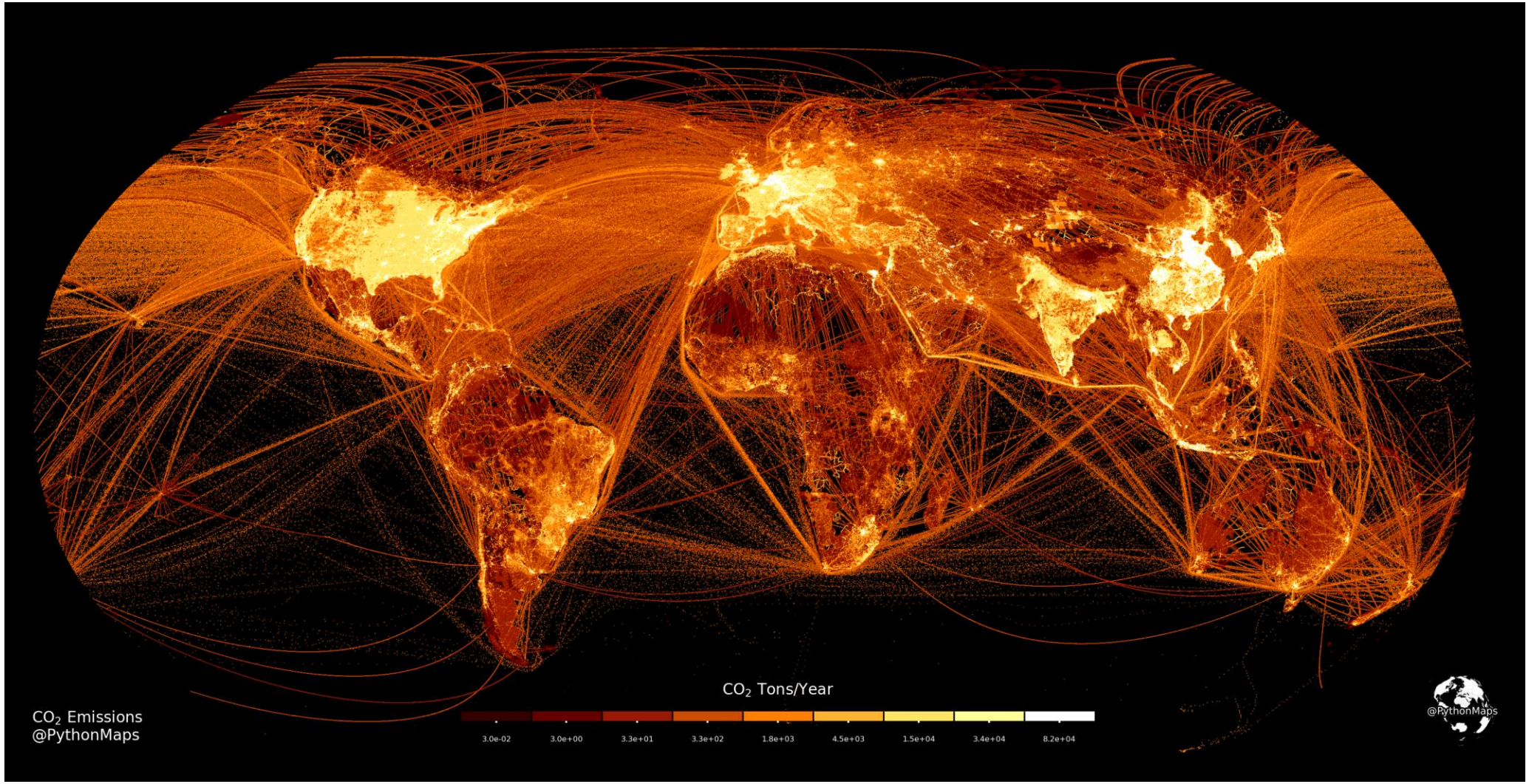
https://www.dkrz.de/de/kommunikation/galerie/Vis



Connolly, Ronan et al (2023); Challenges in the Detection and Attribution of Northern Hemisphere Surface Temperature Trends Since 1850. Research in Astronomy and Astrophysics. 23. 10.1088/1674-4527/acf18e; https://www.researchgate.net/publication/373205213_Challenges_in_the_detection_and_attribution_of_Northern_Hemisphere_surface_temperature_trends_since_1850

Approximate global warming relative to 1850–1900 until temperature limit (°C)[a]	Additional global warming relative to 2010–2019 until temperature limit (°C)	Estimated remaining carbon budgets from the beginning of 2020 ($GtCO_2$) *Likelihood of limiting global warming to temperature limit*[b]					Variations in reductions in non-CO_2 emissions[c]
		17%	*33%*	*50%*	*67%*	*83%*	
1.5	0.43	900	650	500	400	300	Higher or lower reductions in accompanying non-CO_2 emissions can increase or decrease the values on the left by 220 $GtCO_2$ or more
1.7	0.63	1450	1050	850	700	550	
2.0	0.93	2300	1700	1350	1150	900	

(Auszug aus Table SPM.2 IPCC AR6 WGI)



https://towardsdatascience.com/visualising-the-worlds-carbon-dioxide-emissions-with-python-e9149492e820/