Solar Radiation & Earth's Energy Budget

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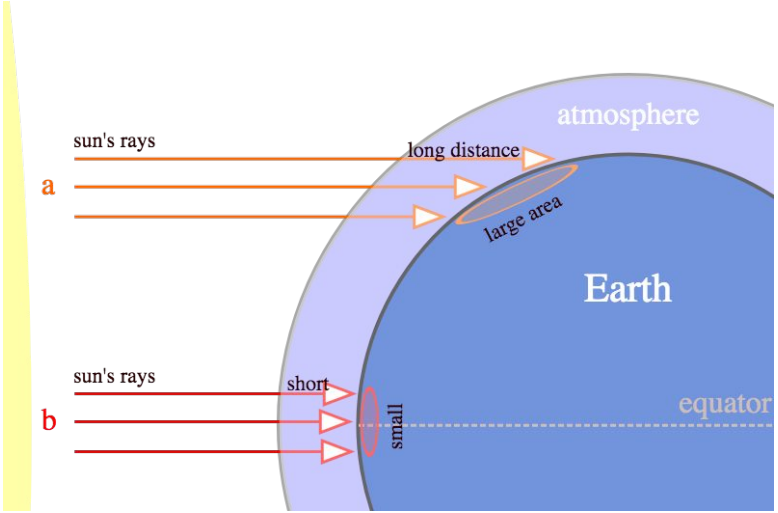
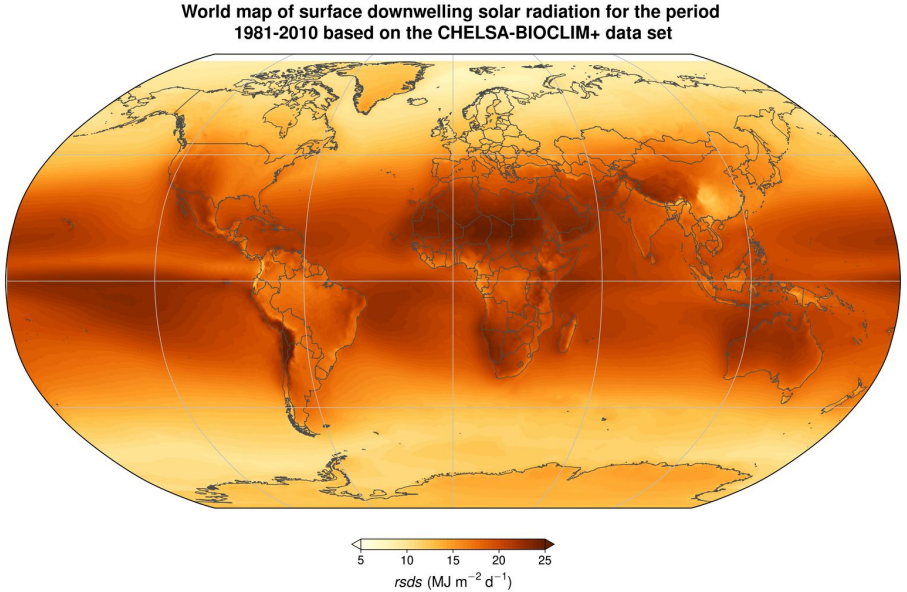
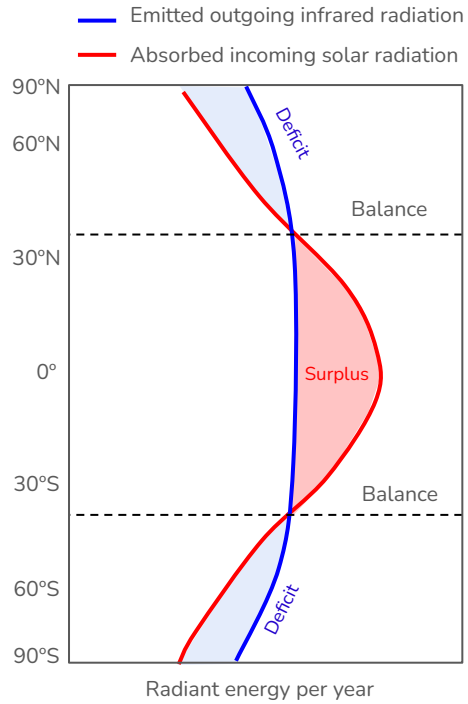
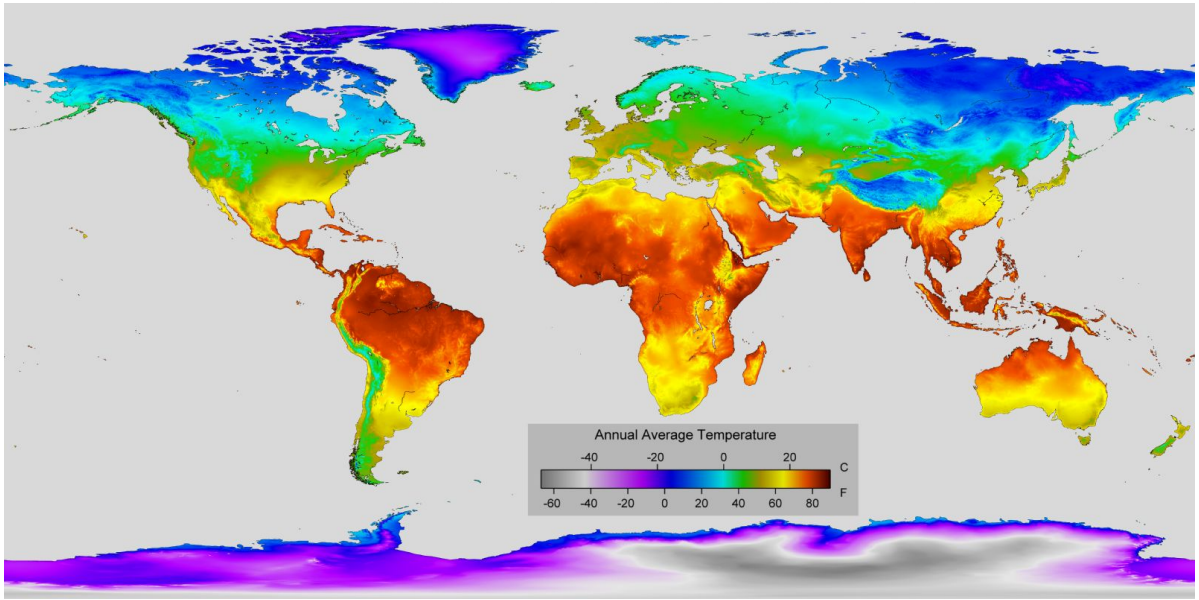
Incoming Solar Radiation



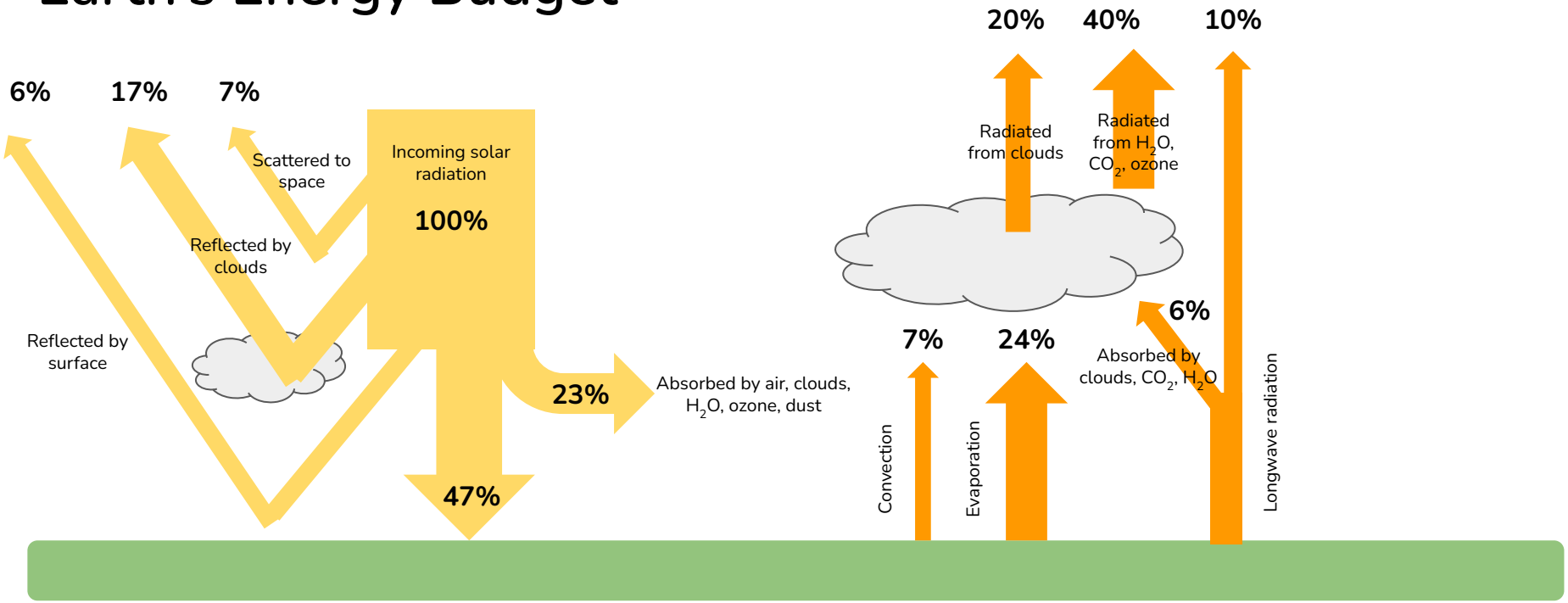


Solar Radiation and Temperature

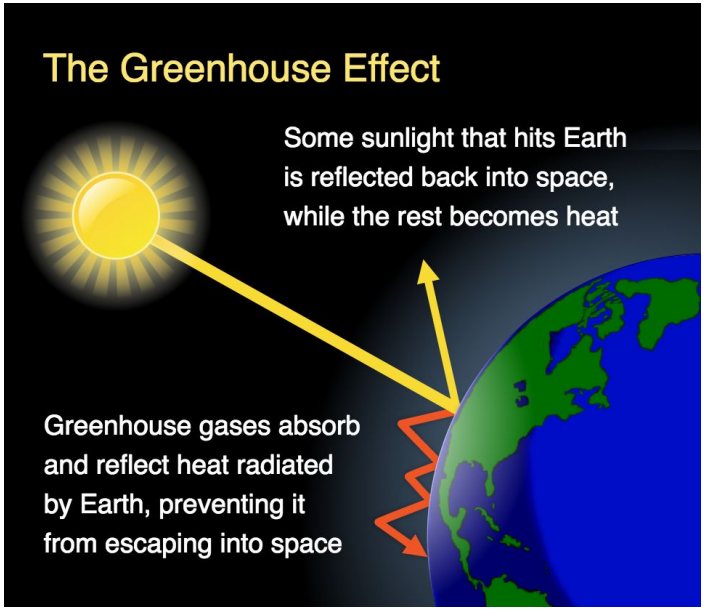


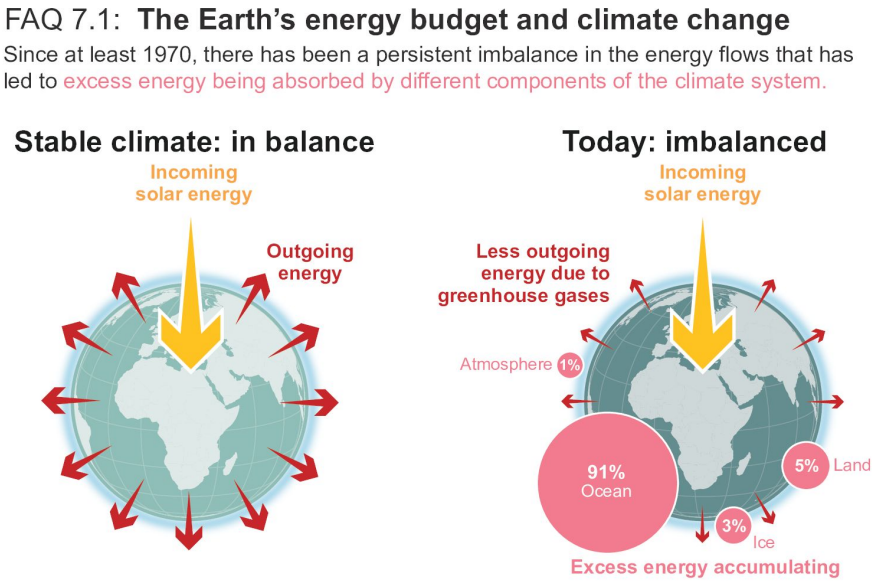


Earth's Energy Budget



Human impact on Earth's energy budget

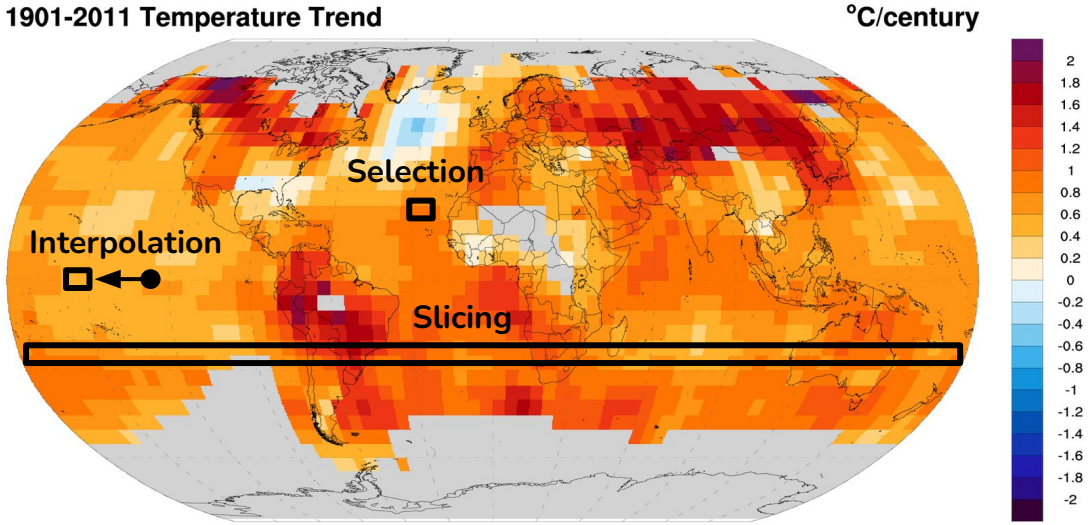




(Efbrazil, CC BY-SA 4.0; AQ 7.1 Figure 1 in IPCC, 2021: Chapter 7. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Forster, P., et al.,)

FAQ 7.1, Figure 1 | The Earth's energy budget compares the flows of incoming and outgoing energy that are relevant for the climate system. Since at least the 1970s, less energy is flowing out than is flowing in, which leads to excess energy being absorbed by the ocean, land, ice and atmosphere, with the ocean absorbing 91%.

Tutorial 2: Selection, Interpolation and Slicing



(Greenmind 1980, CC BY-SA 4.0)

- To assess global variations in climate variables, such as temperature and incoming solar radiation, it's useful to be able to extract and compare subsets of data from a larger dataset
- In this tutorial, we will explore multiple computational tools in Xarray that allow us to select and compare data from a specific spatial and temporal range