Assignment 2

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1 Answering Questions

Q: Which variables does the netCDF contain?
A: Variables are: Height, Latitude, Longitude, Latitude, Longitude bounds, Latitude bounds, Near-Surface Air Temperature, and Time

Q: What are the dimensions of the air temperature variable?
A: There are 3 dimensions for this variable: time, lat, and lon

Q: What kind of data is this: raster, vector, or point?
A: This data is raster data

Q: What is the data type of the air temperature variable: integer, single, or double?
A: The type is float32 which is a single precision

Q: Is this the optimal data type for air temperature data?
A: Yes, we need decimal point, but not too precise to the point we receive double precision

Q: What is the temporal span of each netCDF file?
A: Pre industrial file has 100 years of data
Post industrial file has 64 years
The 3 future projections has 85 years

Q: What are the units of the air temperature data?
A: Keliv

Q: What is the spatial and temporal resolution of the air temperature data?
A: Spatial resolution: 1 deg on latitude, and 1.25 deg on longitude
Temporal resolution: Monthly

Q: What is the spatial projection of the air temperature data?
A: spatial projection is on a regular grid

Q: What is the meaning of ssp in the file names?
A: SSP is the climate scenario to be used for future projections
SSP119: is the scenario where there is a significant global effort to reduce environmental impact
SSP245: is the scenario where there is a moderate effort to reduce environmental impact as well as moderate level of population growth
SSP585: is the scenario where there is a high population growth and huge reliance on fossil fuels

Q: What type of model does the data originate from: physically-based, conceptual, datadriven, hybrid, or other?
A: The data probably originates from a physically-based model

2 Plots

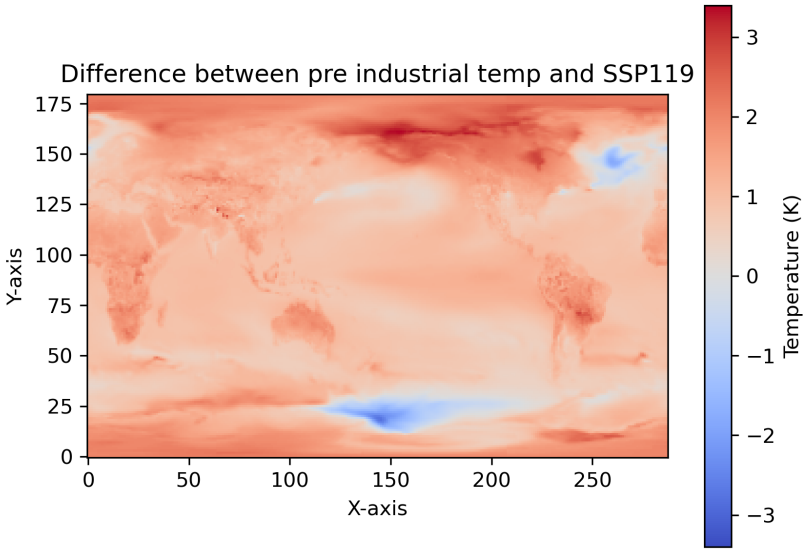

Figure 1: Map showing future temperature change from pre-industrial temperatures based on climate scenario 119

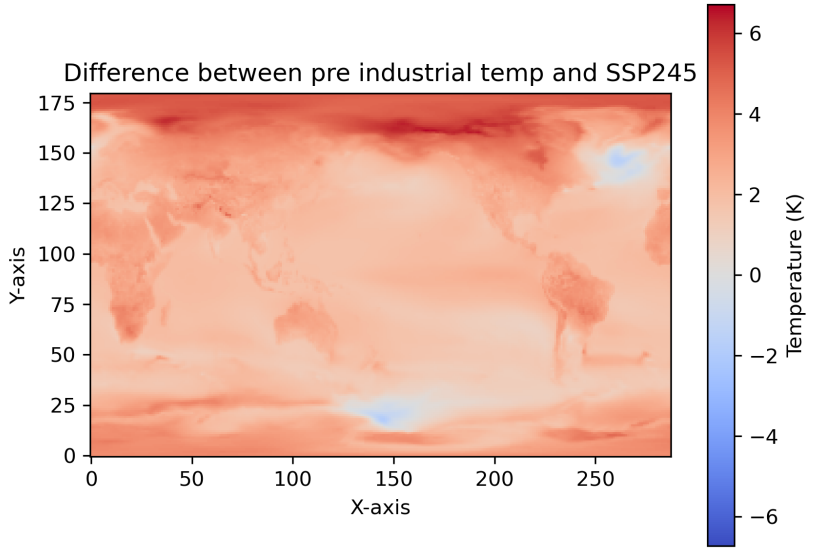

Figure 2: Map showing future temperature change from pre-industrial temperatures based on climate scenario 245

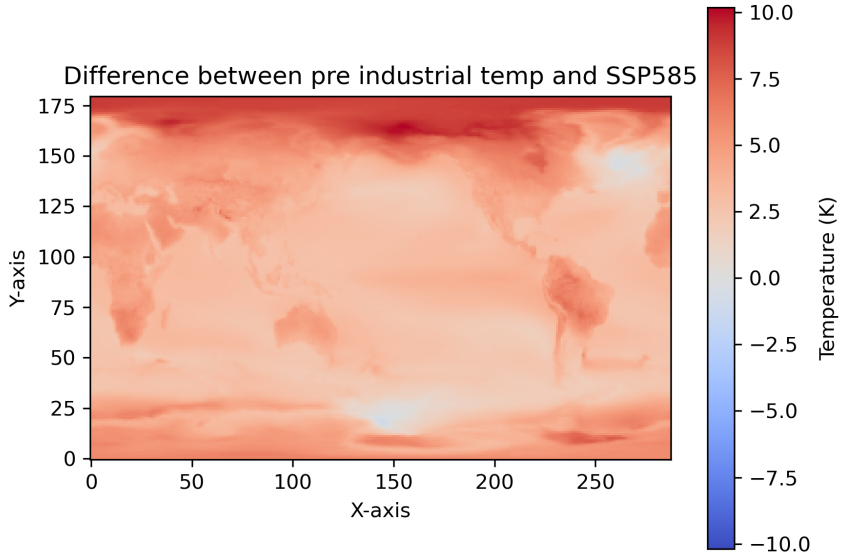

Figure 3: Map showing future temperature change from pre-industrial temperatures based on climate scenario 585

3 Summary and final remarks

Q: Based on Figure 2 of Beck et al. (2023), would you categorize your climate change projections as being on the hot end, the cold end, or relatively moderate?
A: Based on my projections, I would categorize them on the hot end.

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