

ATM 597: Project 3

Group E

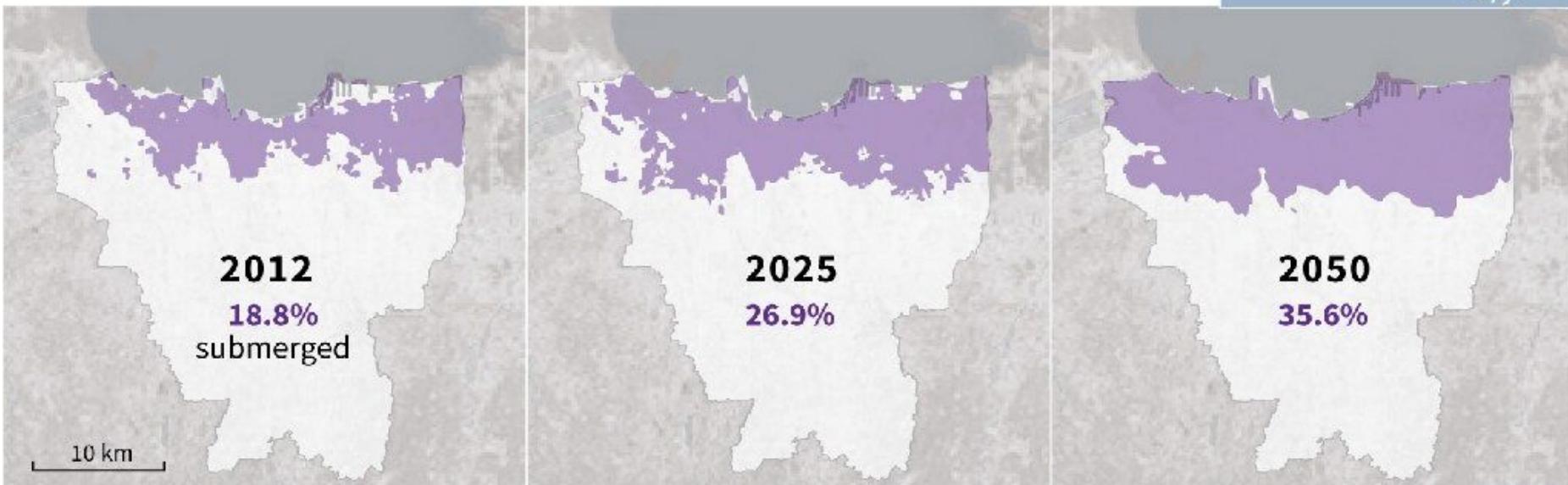
Jakarta, Indonesia (DJF)



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Sinking Jakarta

More than a third of the Indonesian capital could be submerged by 2050, according to expert forecasts



Source: Bandung Institute of Technology

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GPCP Precipitation Data Overview

Downloaded data from NCEI server using wget. Merged the data using Xarray into one NetCDF file on Google Colab.

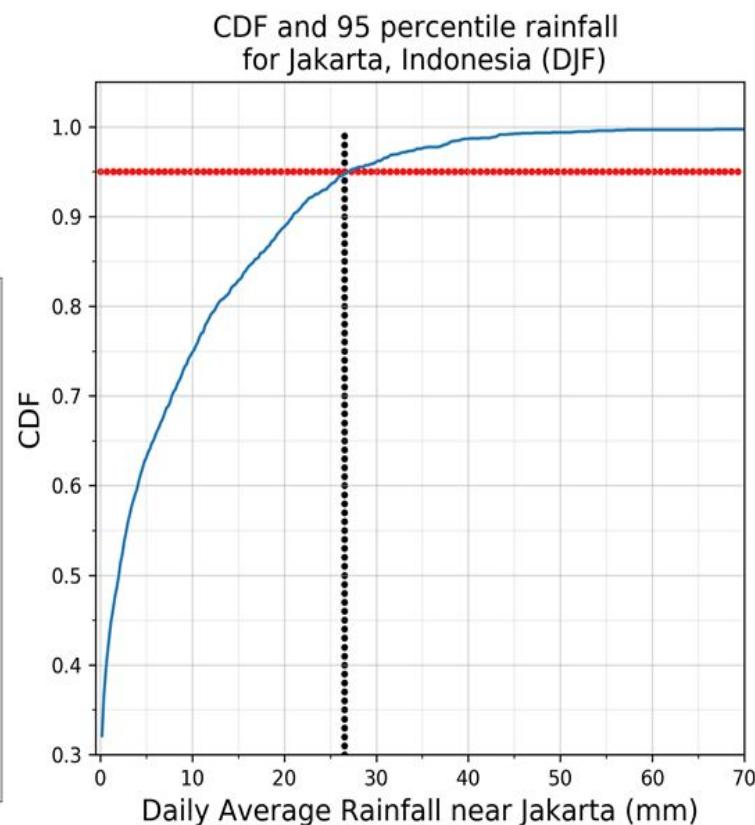
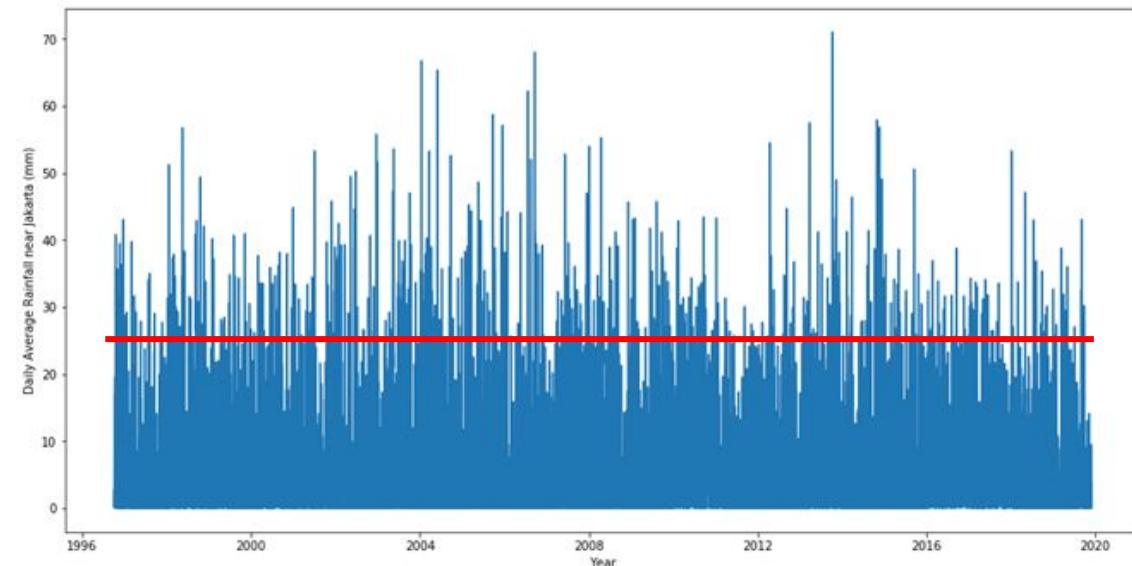
Jakarta (Coordinates : 6.2 S, 106.8 E)

Months : DJF

Calculated the 95th percentile rainfall value = 26.5 mm/day.

Plotted the CDF. 95th percentile. Value corroborated.

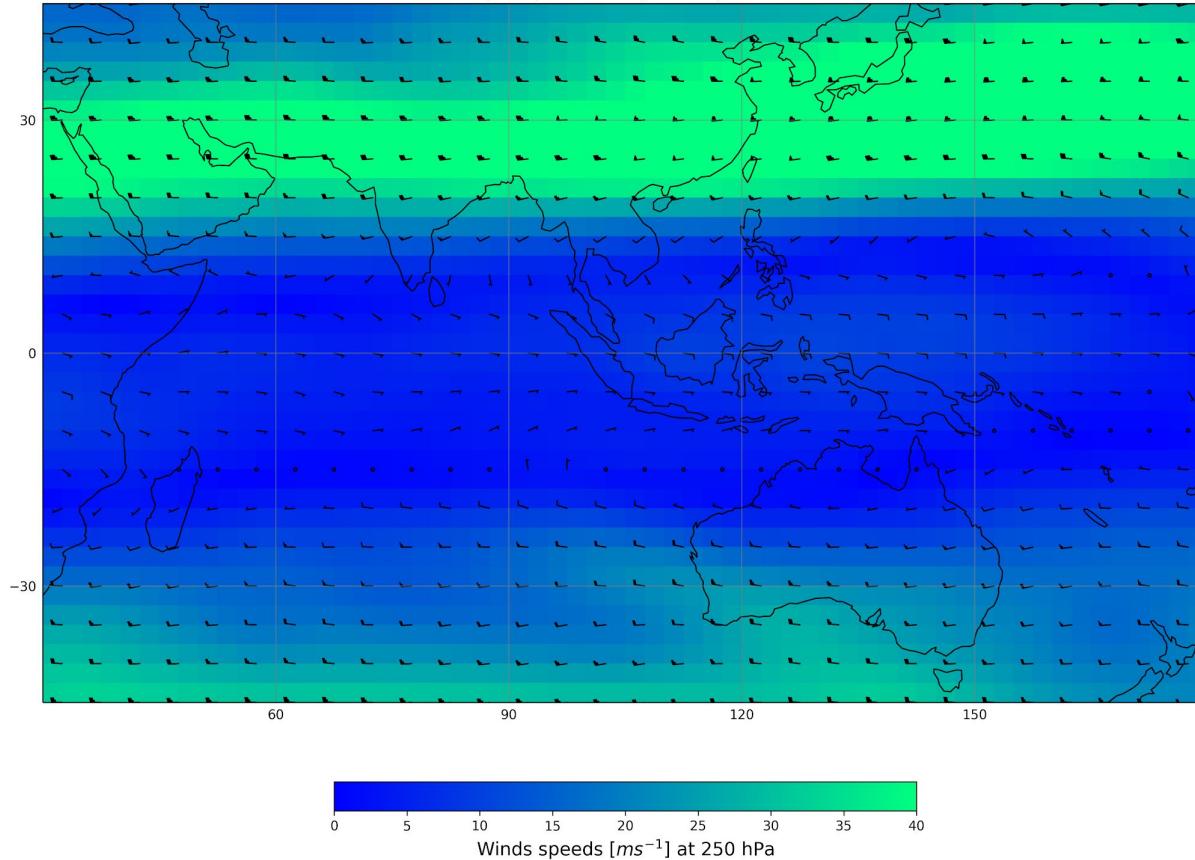
104 extreme precipitation events isolated.



Extreme Precipitation Day Composites

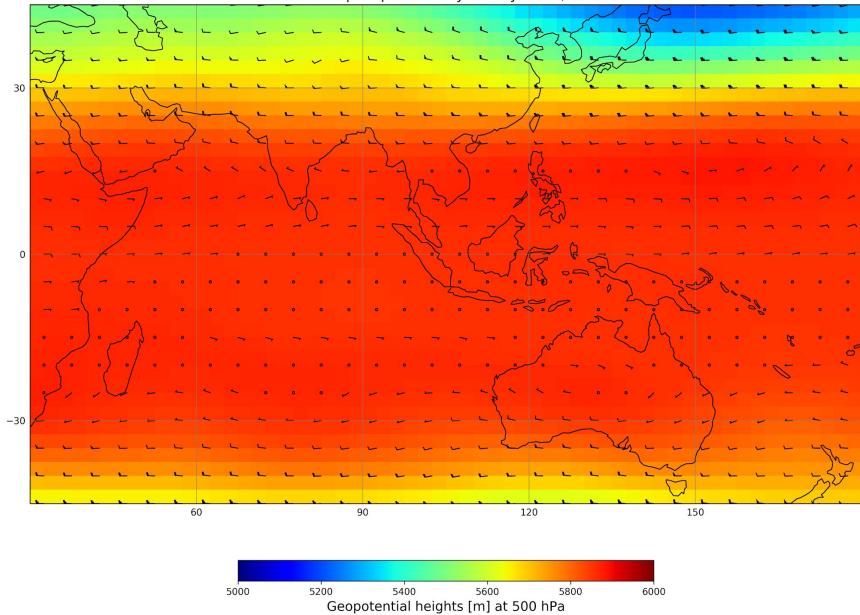
250 hPa

250-hPa Wind Speeds (m/s) and Wind Barbs
for extreme precipitation days over Jakarta, Indonesia

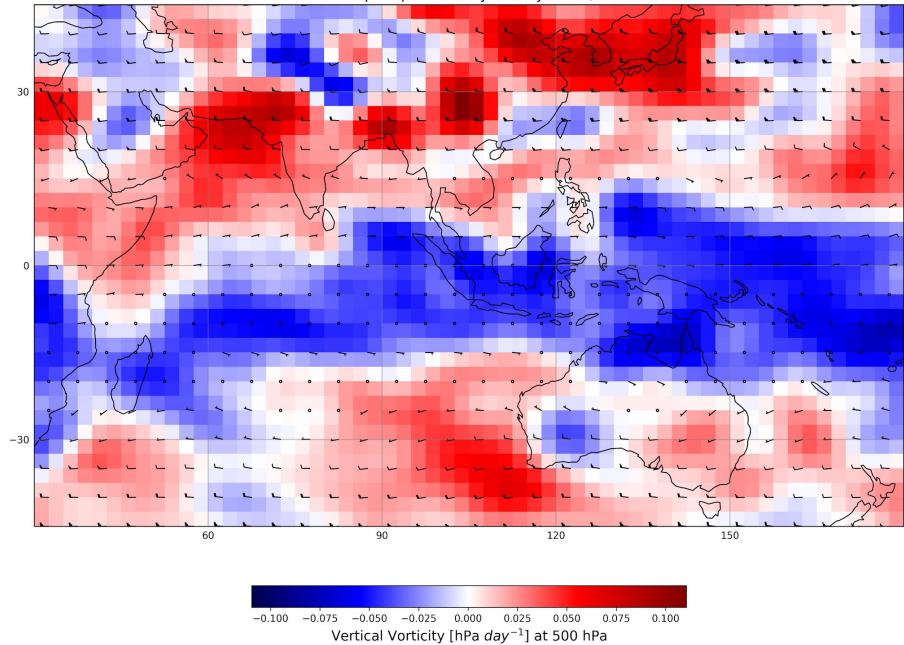


500 hPa

500-hPa Geopotential Heights (m),
Wind Speeds (m/s) and Wind Barbs
for extreme precipitation days over Jakarta, Indonesia

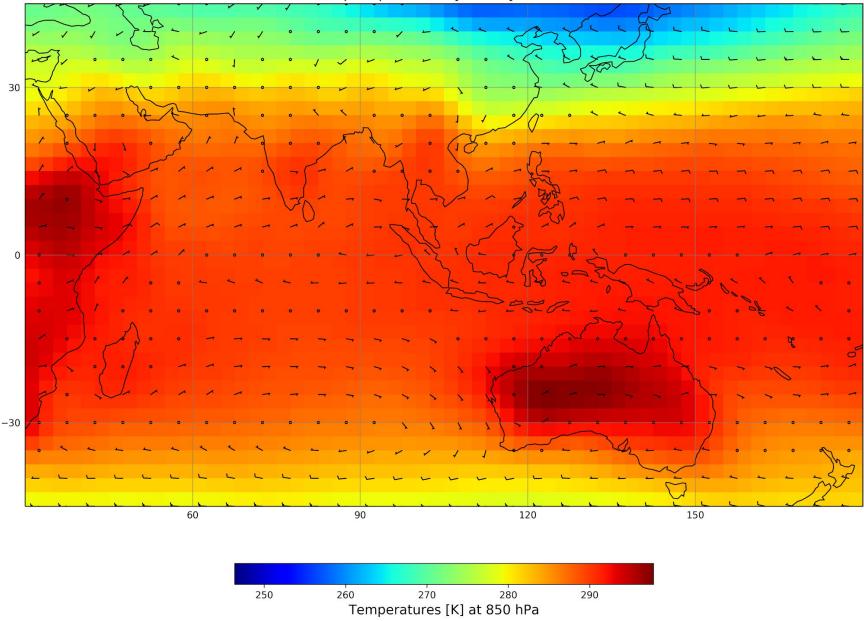


500-hPa Omega [hPa day^{-1}],
Wind Speeds (m/s) and Wind Barbs
for extreme precipitation days over Jakarta, Indonesia

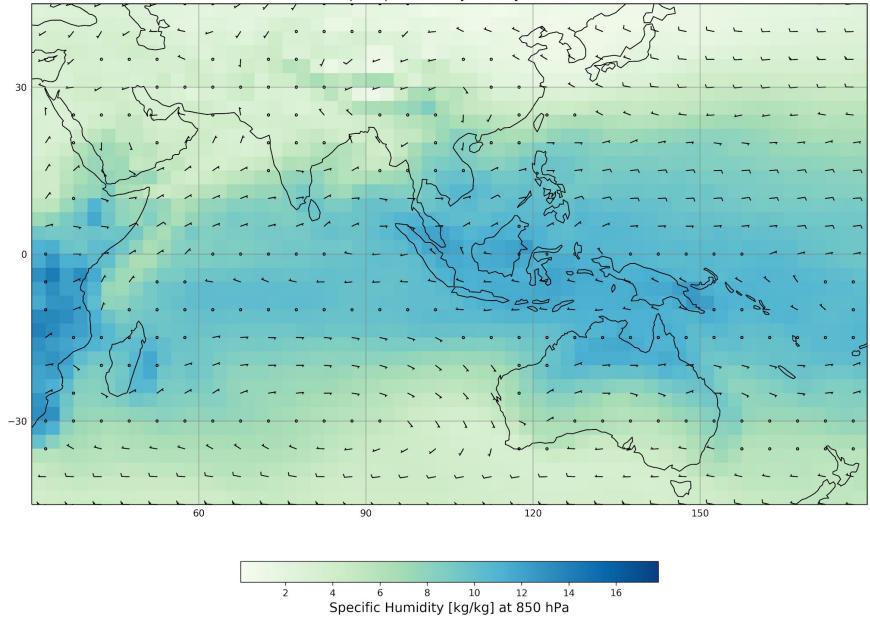


850 hPa

850-hPa Temperatures [K],
Wind Speeds (m/s) and Wind Bars
for extreme precipitation days over Jakarta, Indonesia

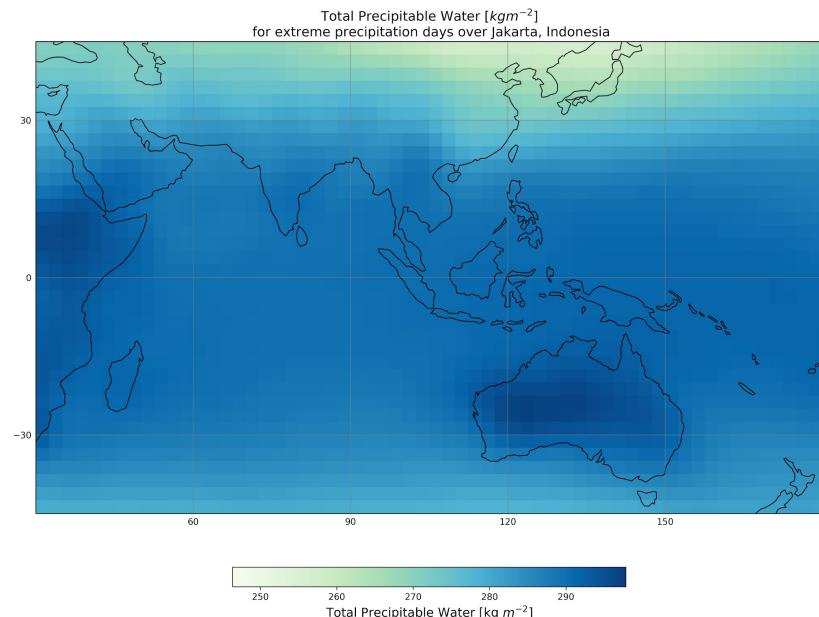
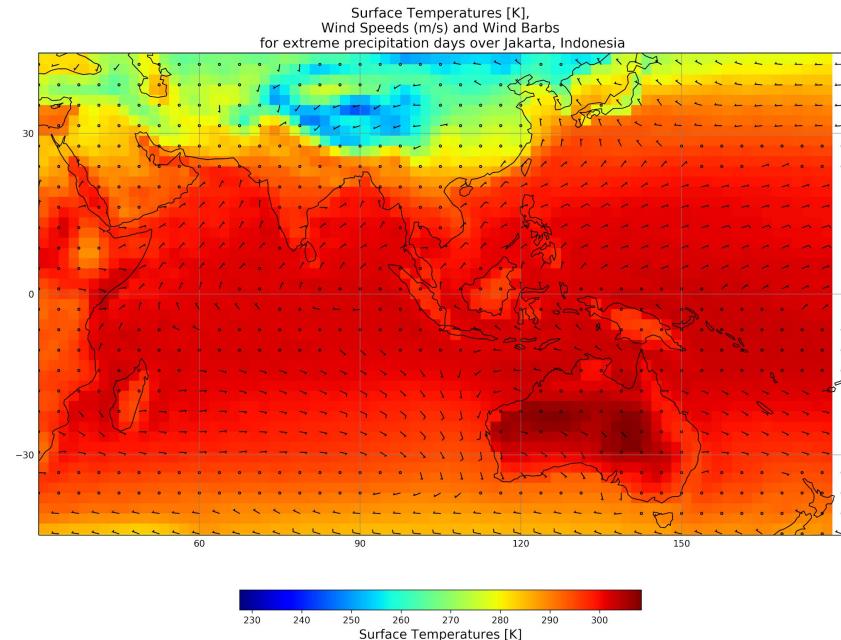


850-hPa Specific Humidity [kg/kg],
Wind Speeds (m/s) and Wind Bars
for extreme precipitation days over Jakarta, Indonesia



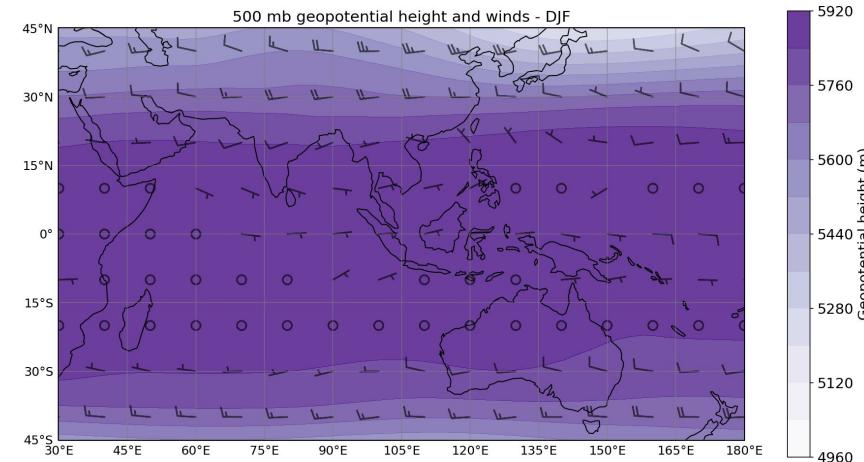
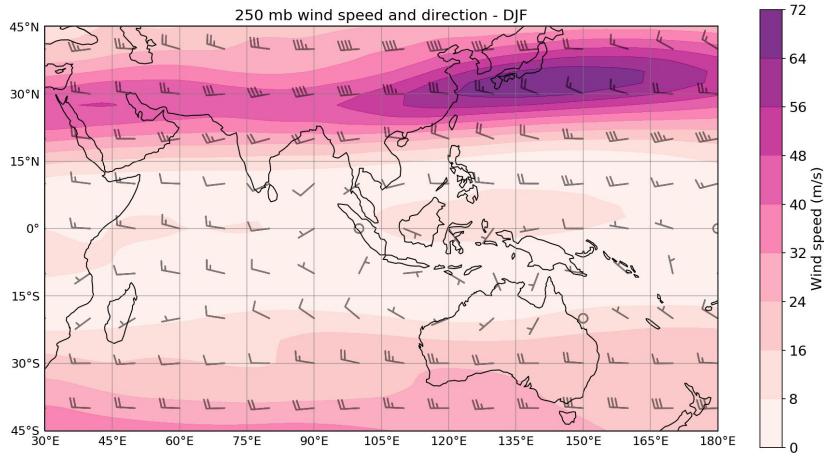
Surface Temperature

Precipitable Water

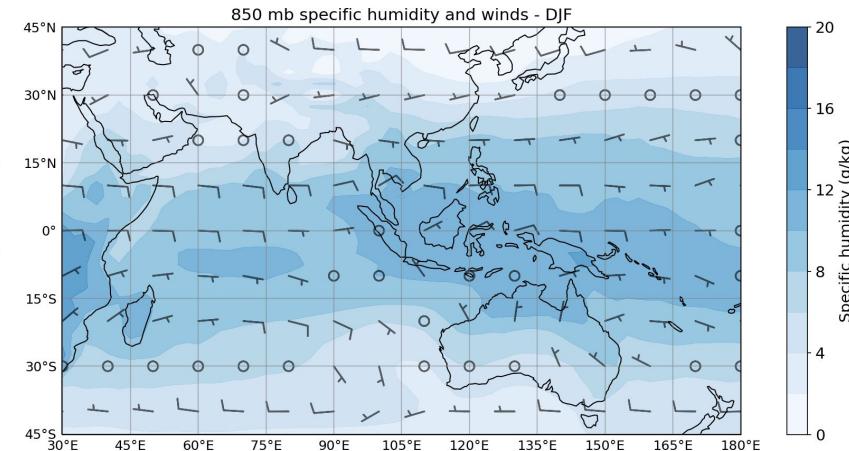
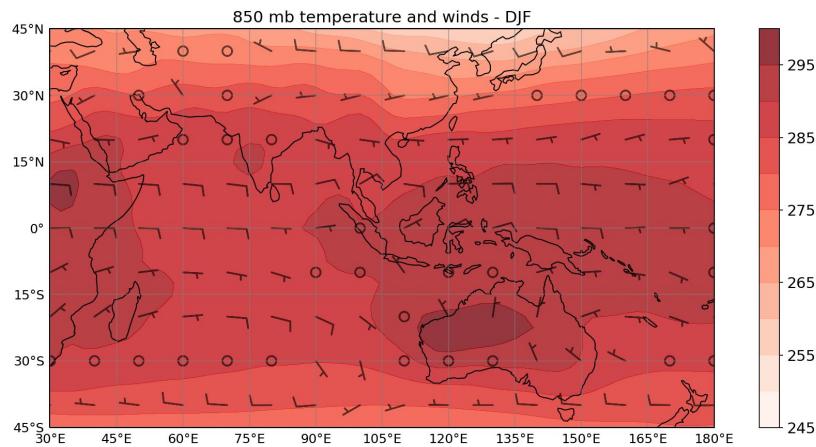


Long-term Mean Composites

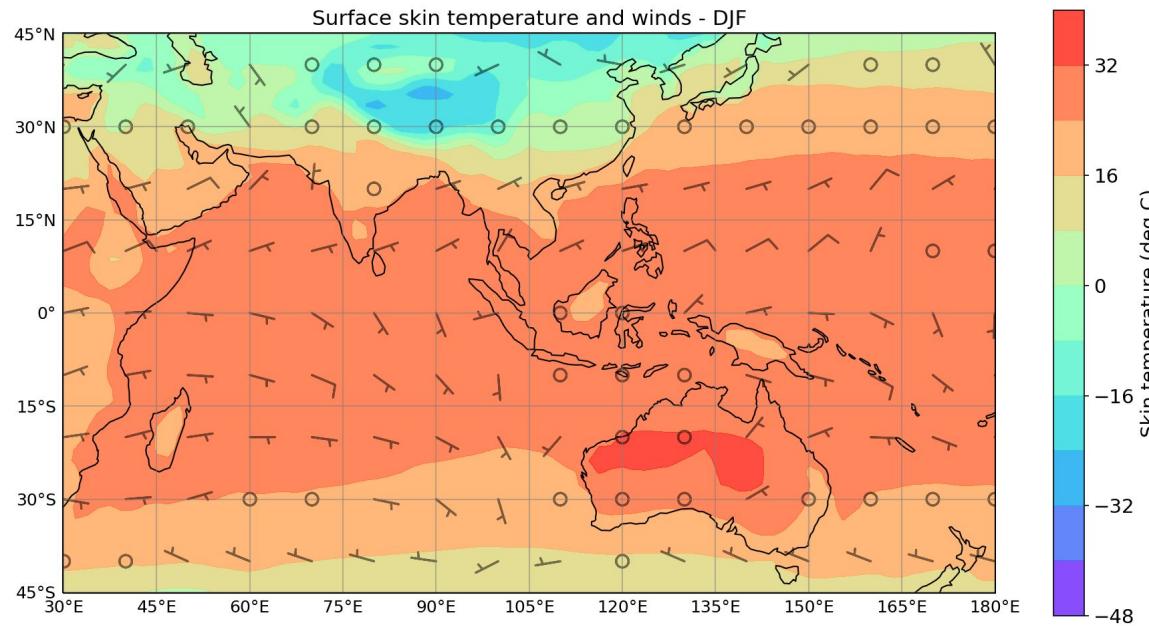
Mean upper air conditions (1981-2010) - DJF



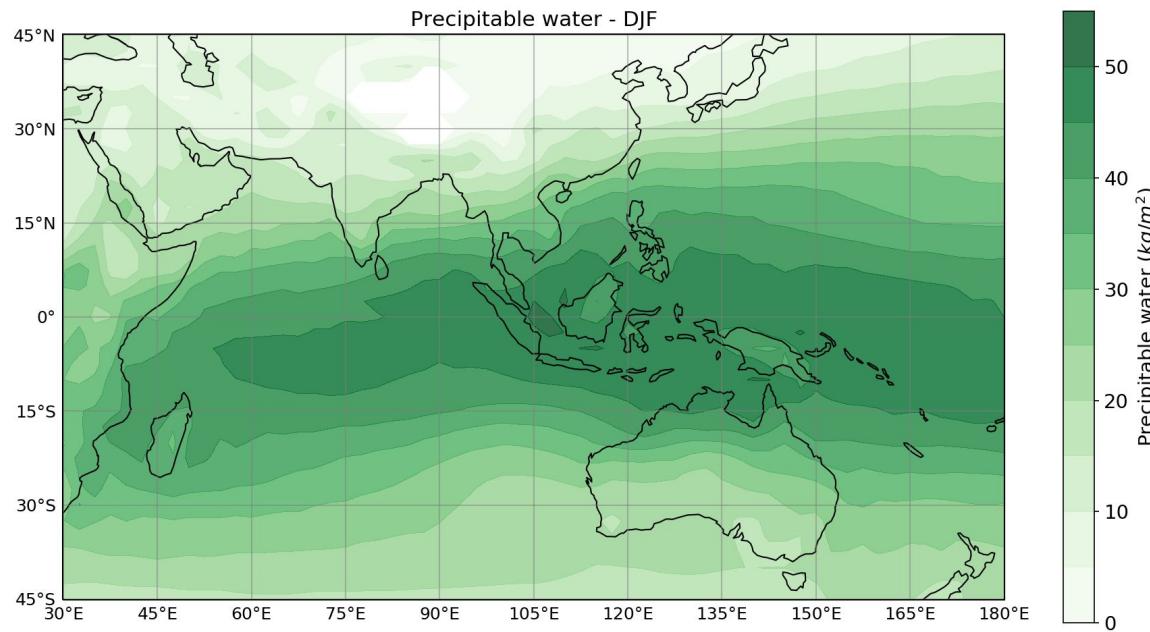
Mean lower atmospheric conditions (1981-2010) - DJF



Mean surface conditions (1981-2010) - DJF



Mean precipitable water (1981-2010) - DJF



Anomaly Composites for Extreme Precipitation Days

250-hPa Wind Speed and Direction Anomalies: DJF

