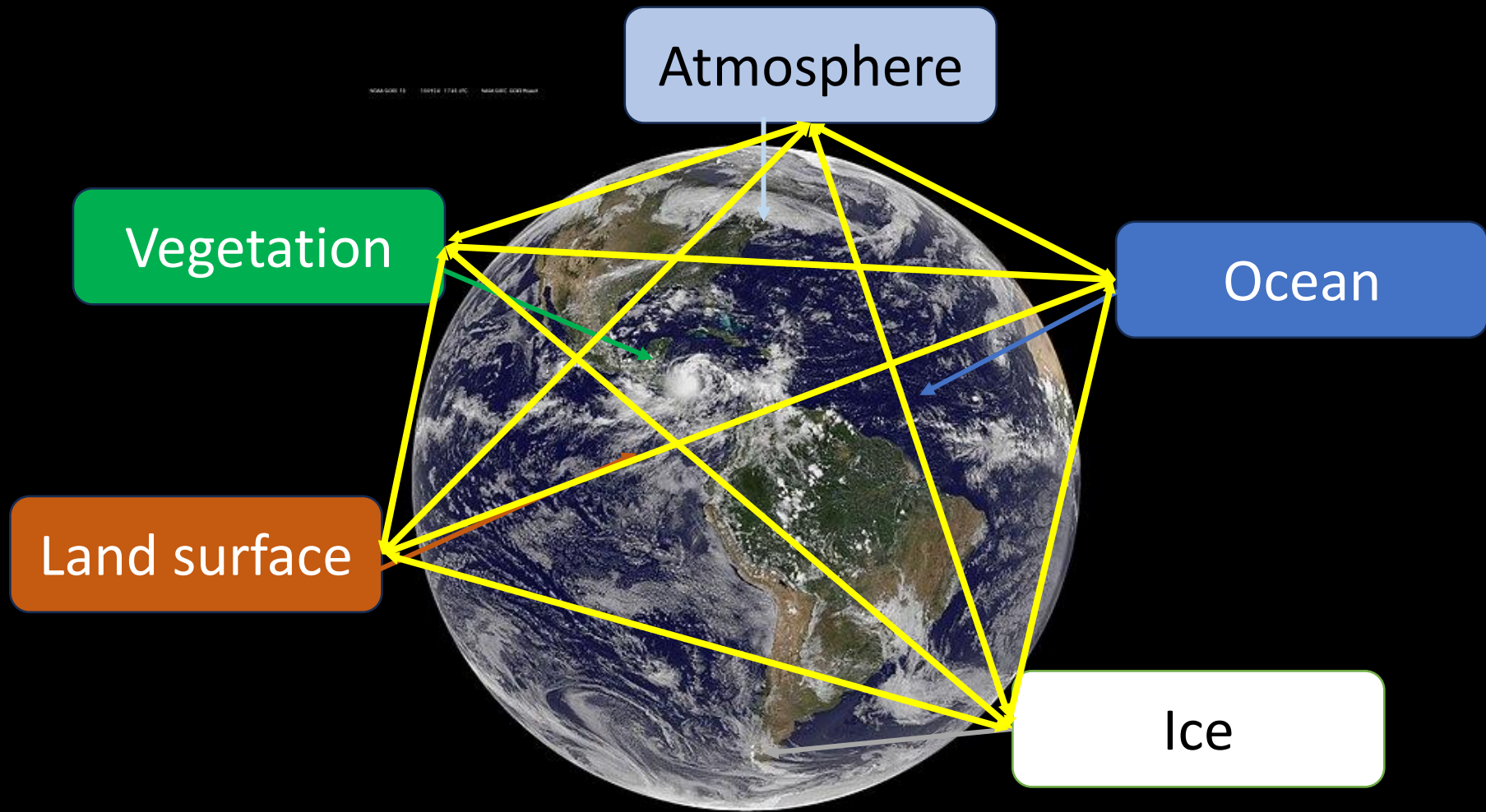




Weather and Climate

Lisa Schielicke



What is the climate system?

Weather refers to the atmospheric conditions, including temperature, wind, precipitation, and humidity, that occur in a specific location at a given time.



What are weather and climate?



Photo by [engin akyurt](#) at [Unsplash](#)



Photo by [Max LaRoche](#) at [Unsplash](#)



Photo by [Torsten Dederichs](#) at [Unsplash](#)

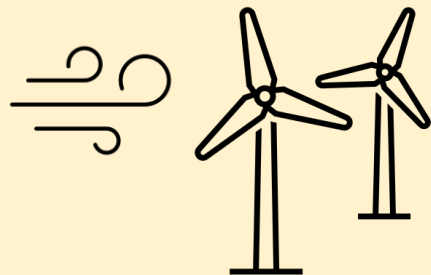


Photo by [Ganapathy Kumar](#) at [Unsplash](#)



Photo by [Agustin Lautaro](#) at [Unsplash](#)



Photo by [Boudhayan Bardhan](#) at [Unsplash](#)

What are **weather** and **climate**?

Short-term, every variable that describes the actual condition of the atmosphere and can be measured directly and instantaneous

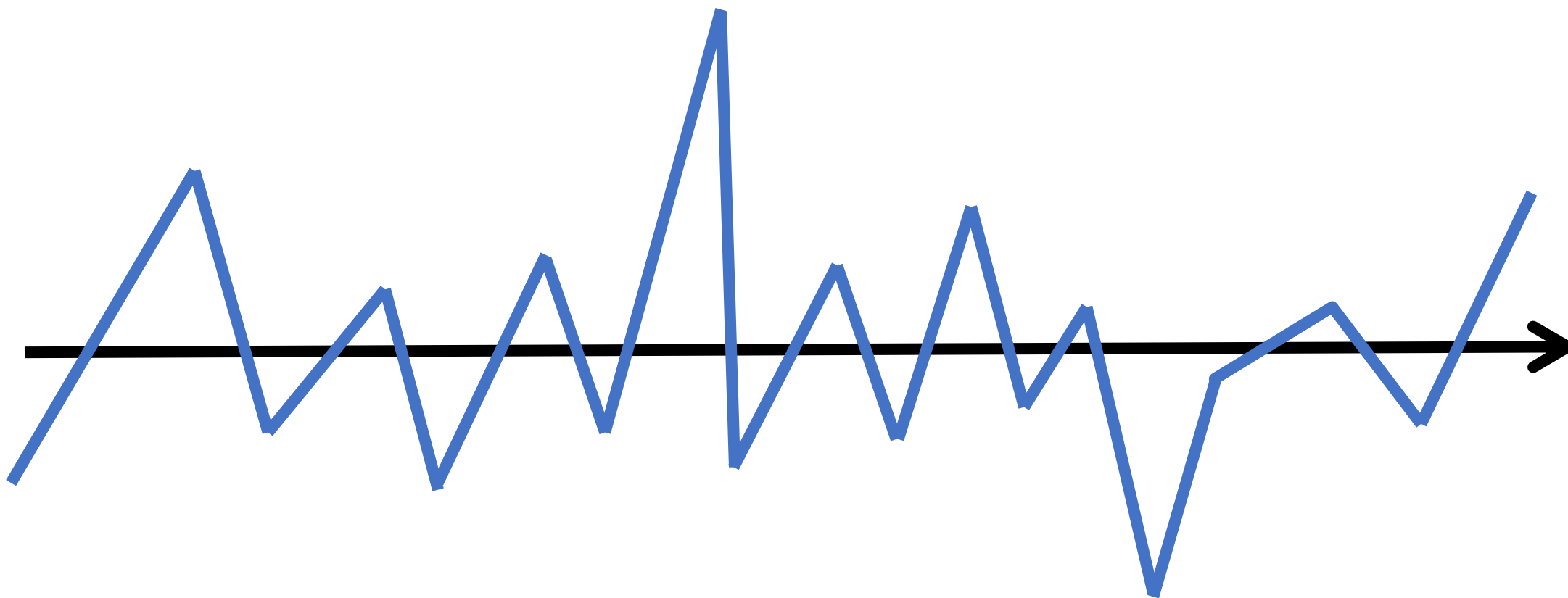
„It rains in London today“

„It will be 25°C in Paris tomorrow“

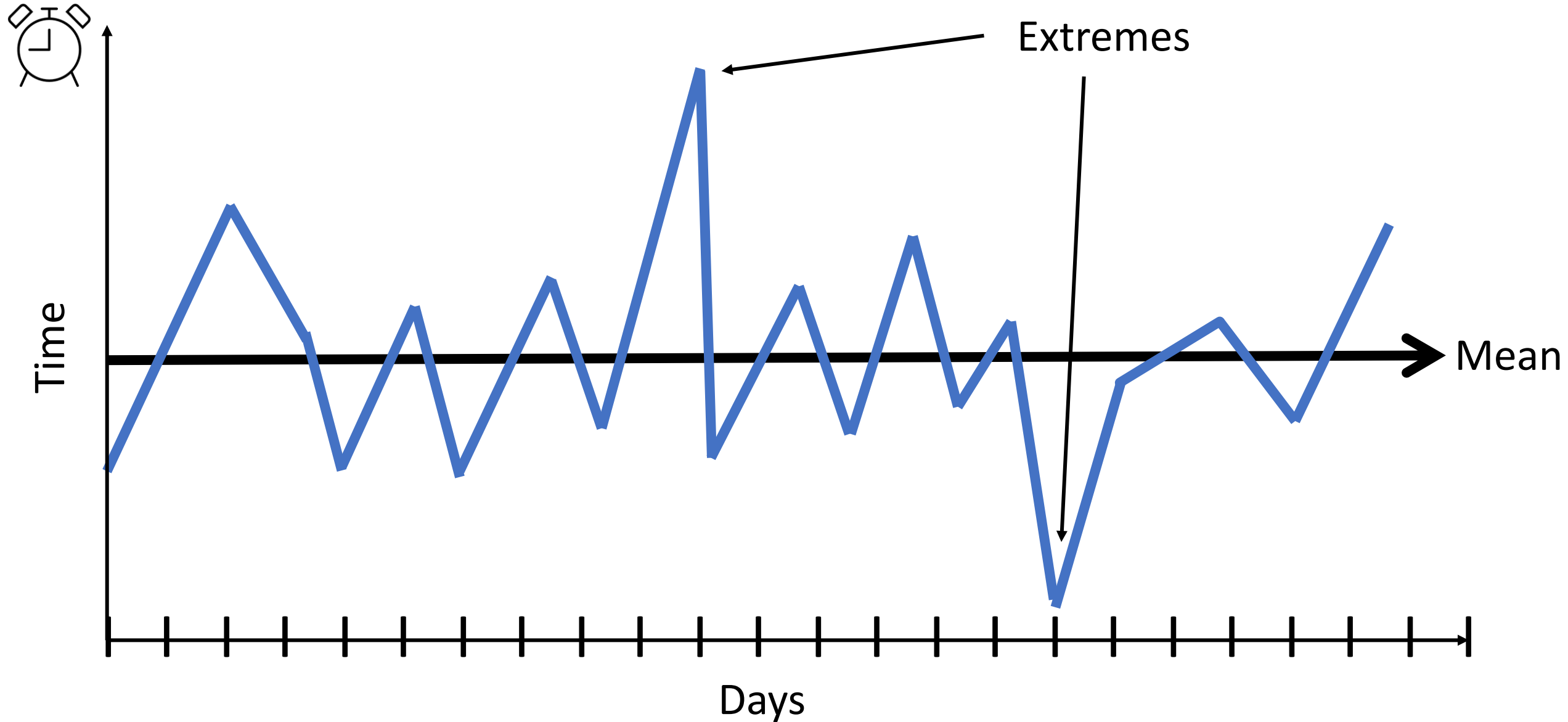
Measured values investigated over a long period of time (generally 30 years)

„Mean annual temperature in Bonn is 10.6°C and the average annual precipitation is 847 mm.“

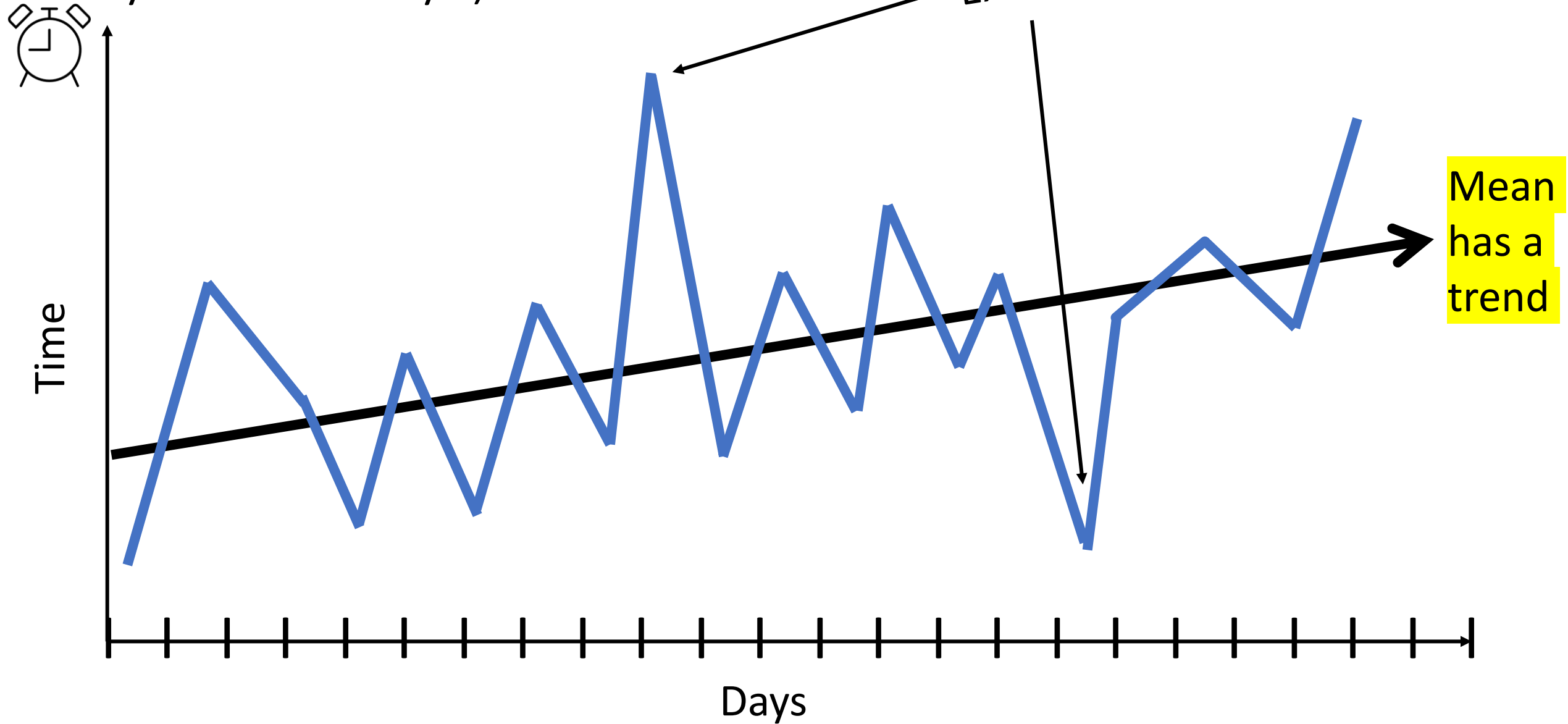
Wiggles around a mean value



Wiggles around a mean value (Time you awoken)

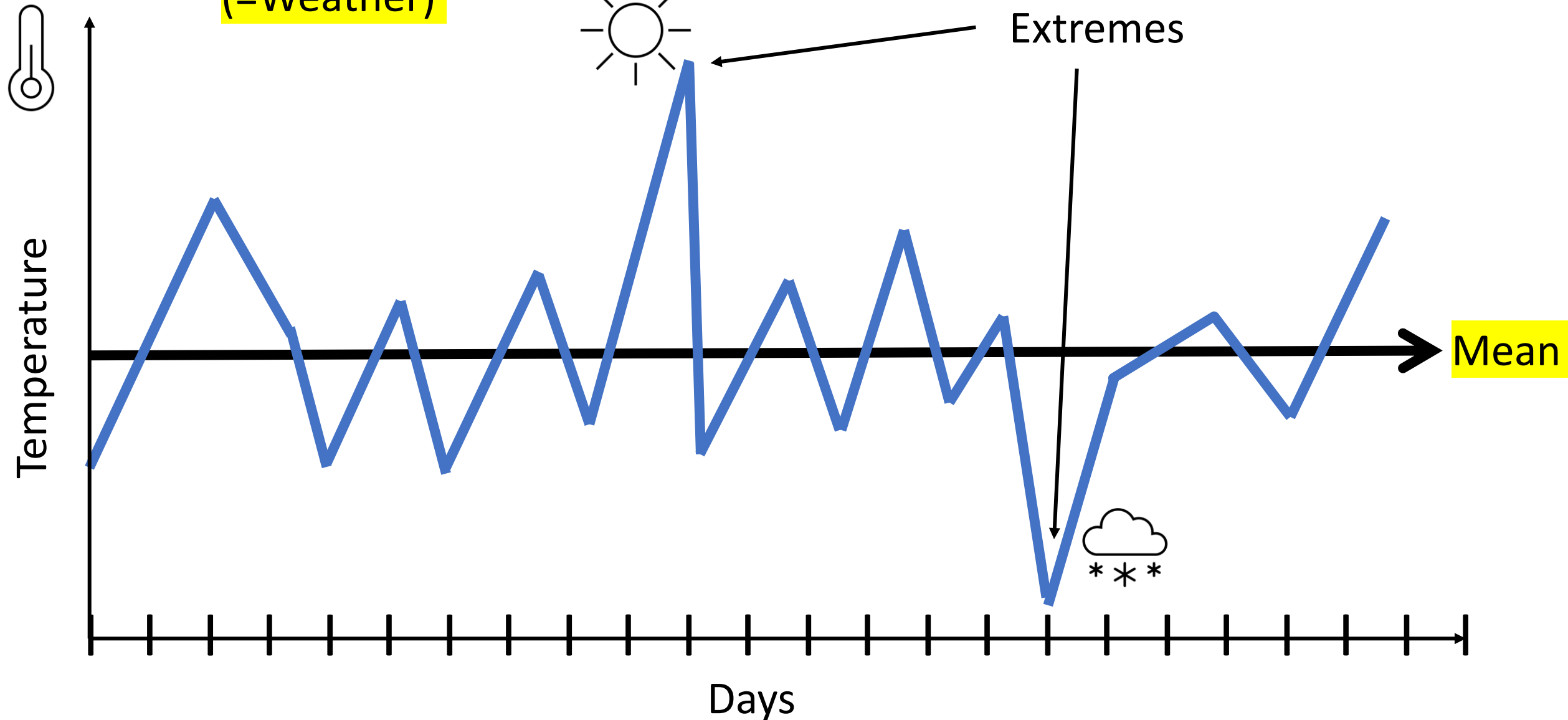


Wiggles around a mean value (Time you awaken in your holidays)



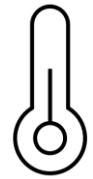
Wiggles around a mean value (daily temperatures)

(=Weather)

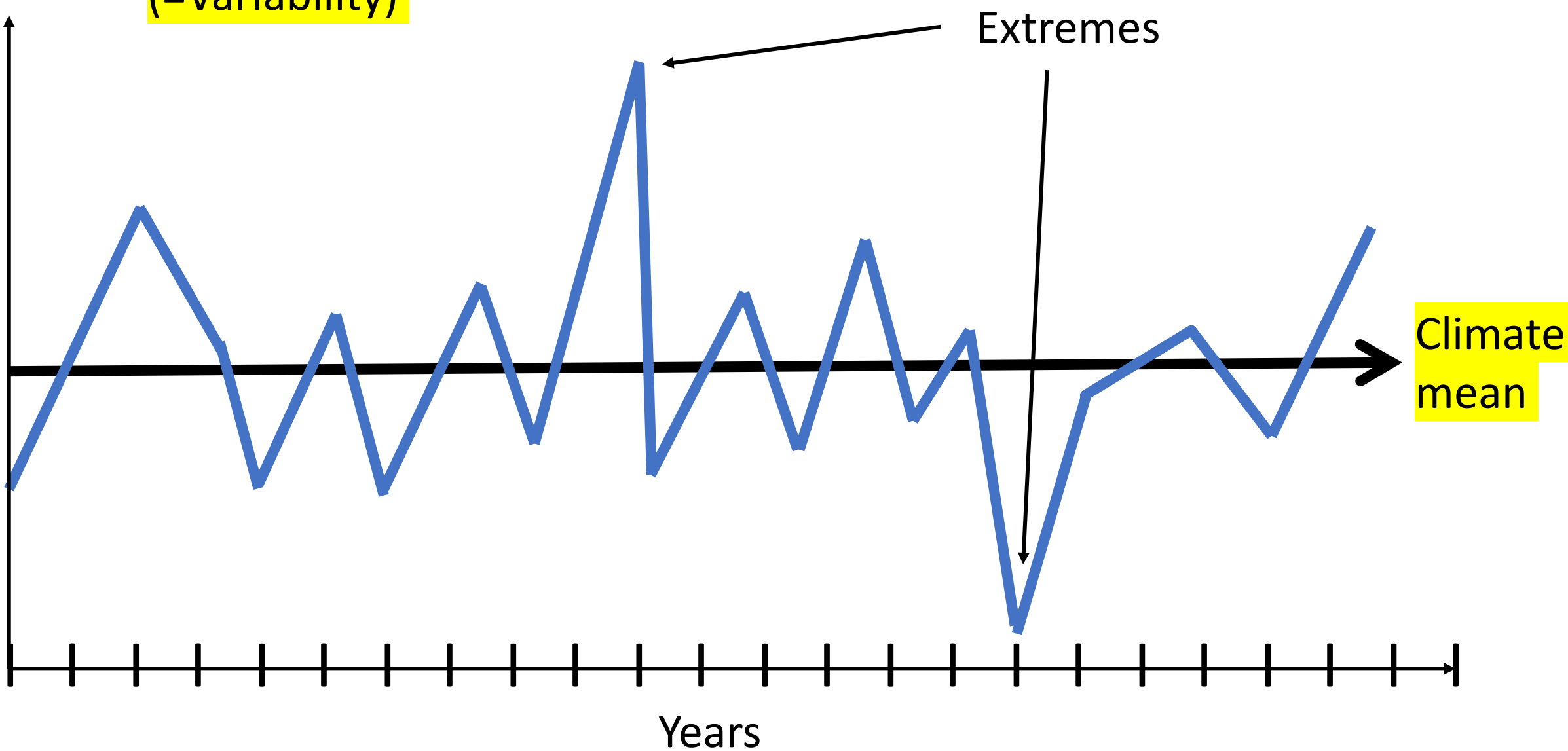


Wiggles around a mean value (annual temperatures)

(=Variability)



Temperature



Wiggles around a mean value (annual temperatures)

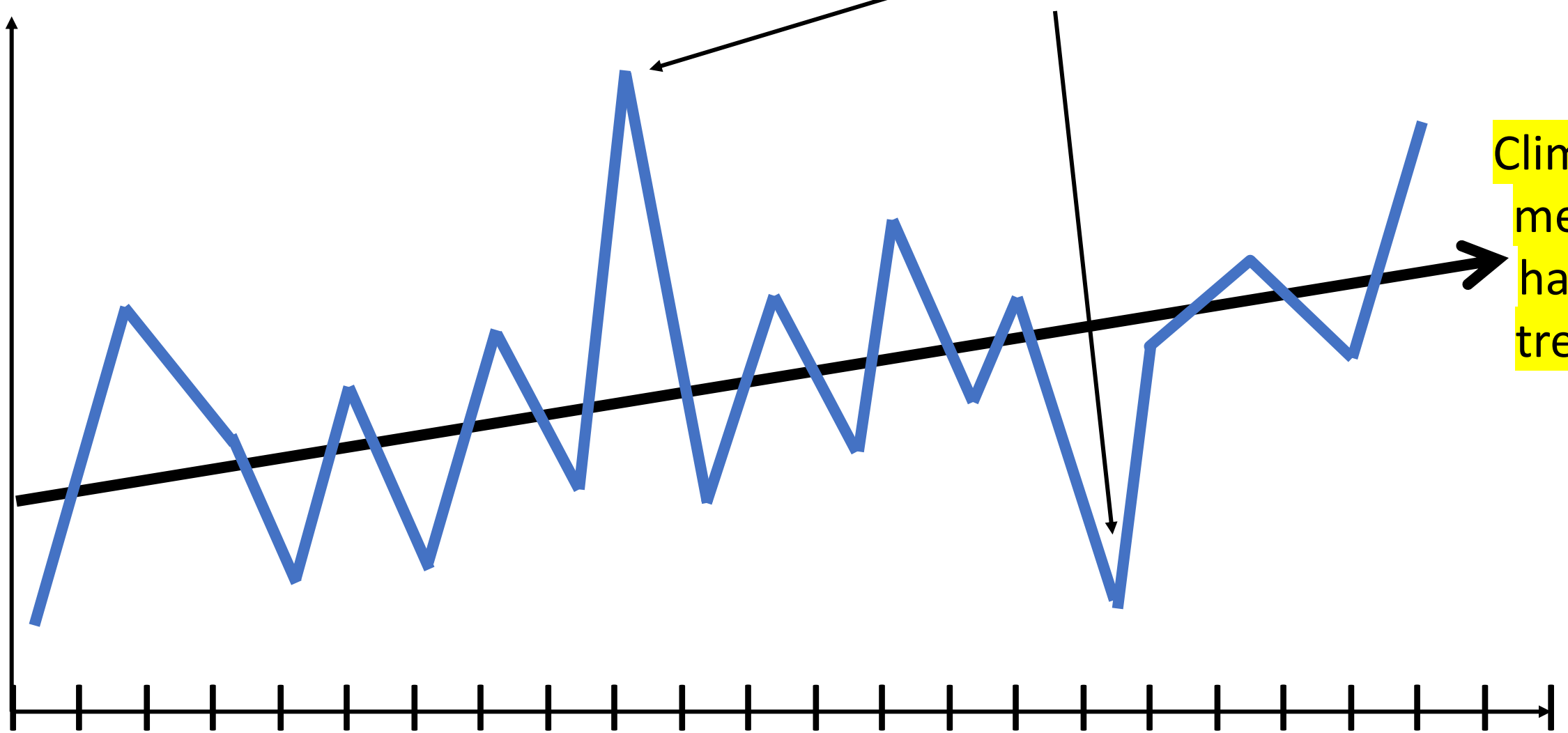
(=Variability)



Time

Extremes

Climate mean has a trend

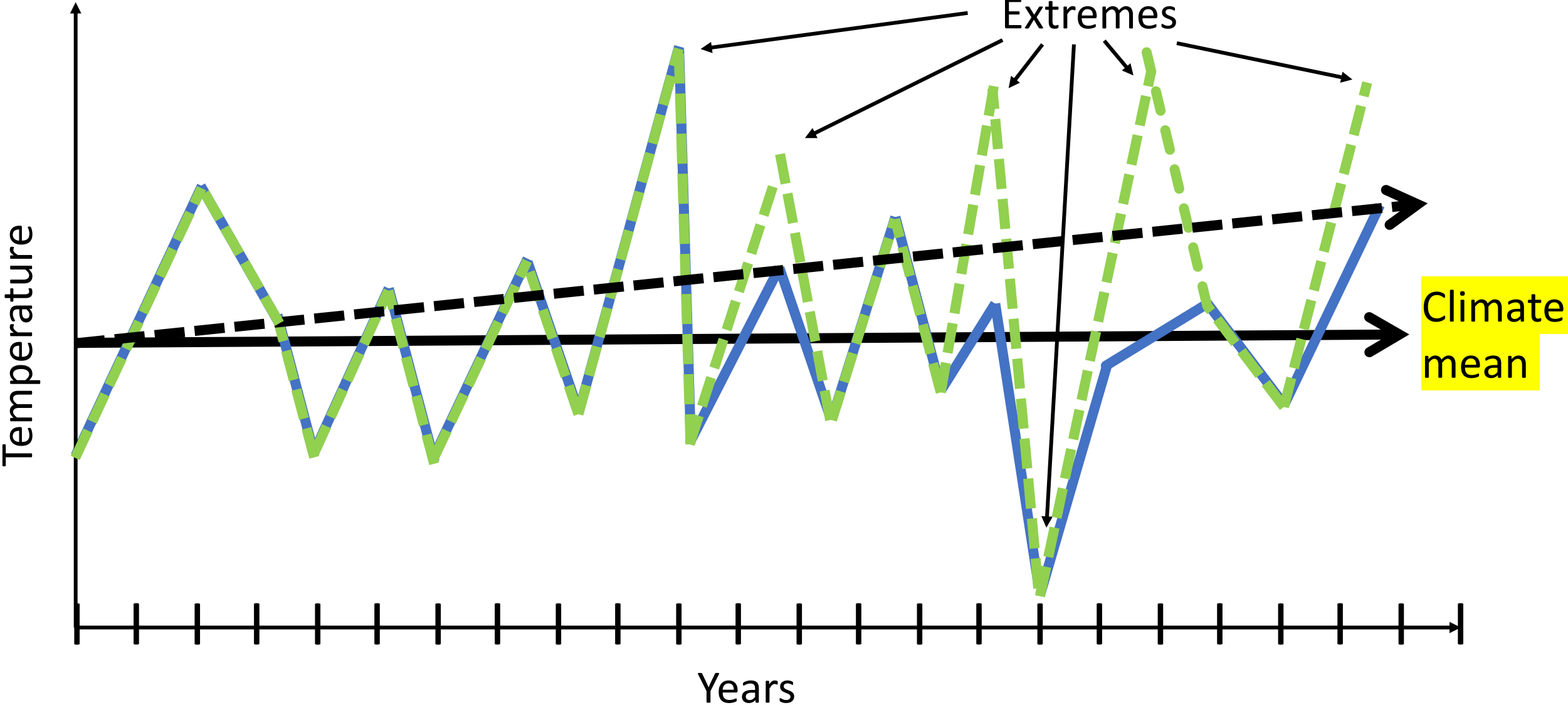


Years



How do real temperature observations look like?

Extra: Are extremes related to weather or climate?



Links to recommended videos (in German)

- Sven Plögers Klimablick: Wetter ist nicht gleich Klima! (S01/E04). SWR. <https://www.ardmediathek.de/video/sven-ploegers-klimablick/wetter-ist-nicht-gleich-klima-s01-e04/swr/Y3JpZDovL3N3ci5kZS9hZXgvbzEzNDMwNDU> (last access: 19-Sep-2023)
- Die Maus: Wetter, Klima und der menschliche Einfluss. WDR. <https://youtu.be/zfTPJYxkDNY?feature=shared> (last access: 19-Sep-2023)
- Kachelmannwetter: Was ist der Unterschied zwischen Wetter und Klima? <https://youtu.be/Pf-M8eTiKcA?feature=shared> (last access: 19-Sep-2023)