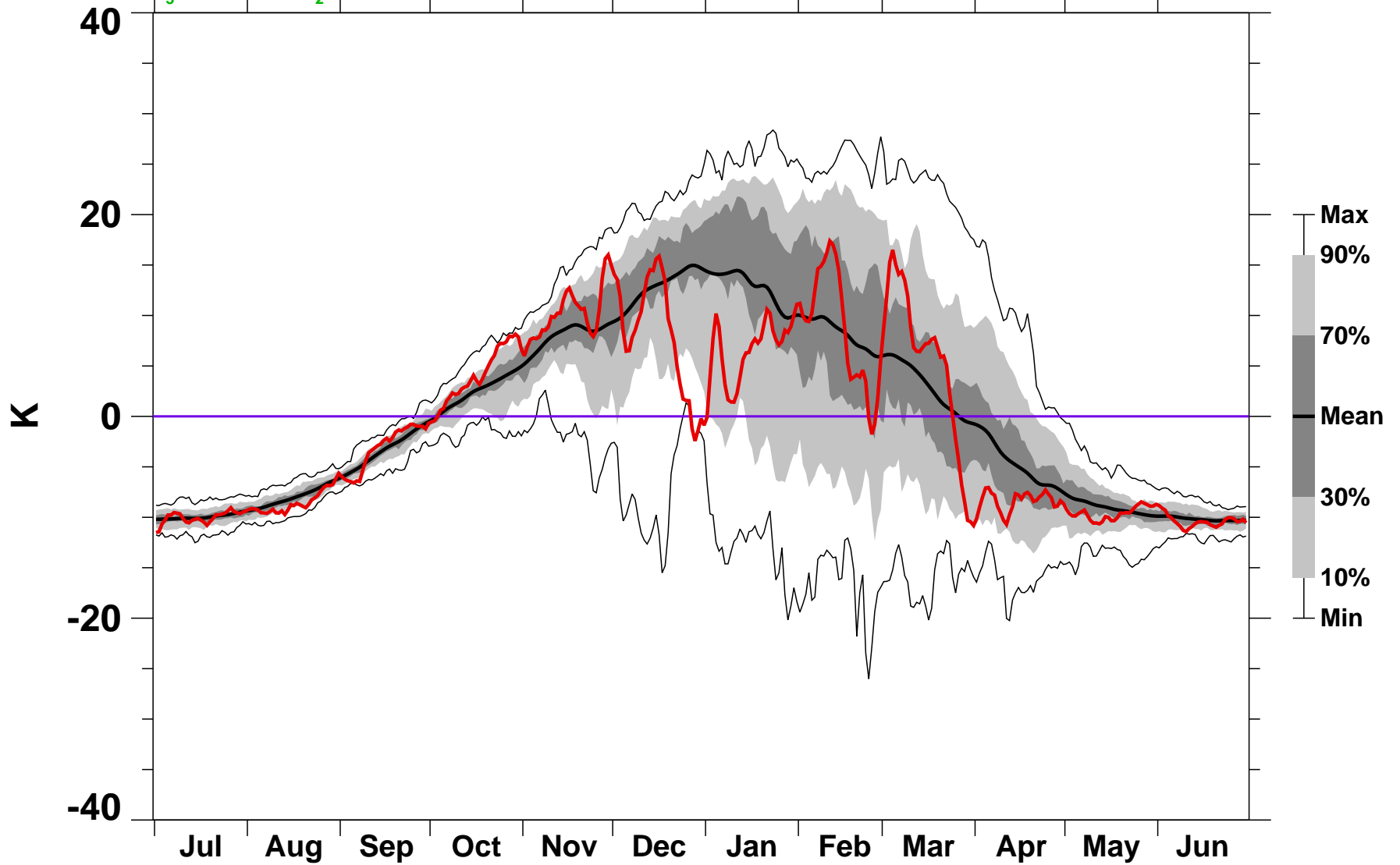


# 50-80°N Zonal Mean Temperature Gradient

$\text{HNO}_3 = 6 \text{ ppbv}$ ,  $\text{H}_2\text{O} = 4.5 \text{ ppmv}$

50 hPa MERRA2



1978/1979-2022/2023

1997/1998