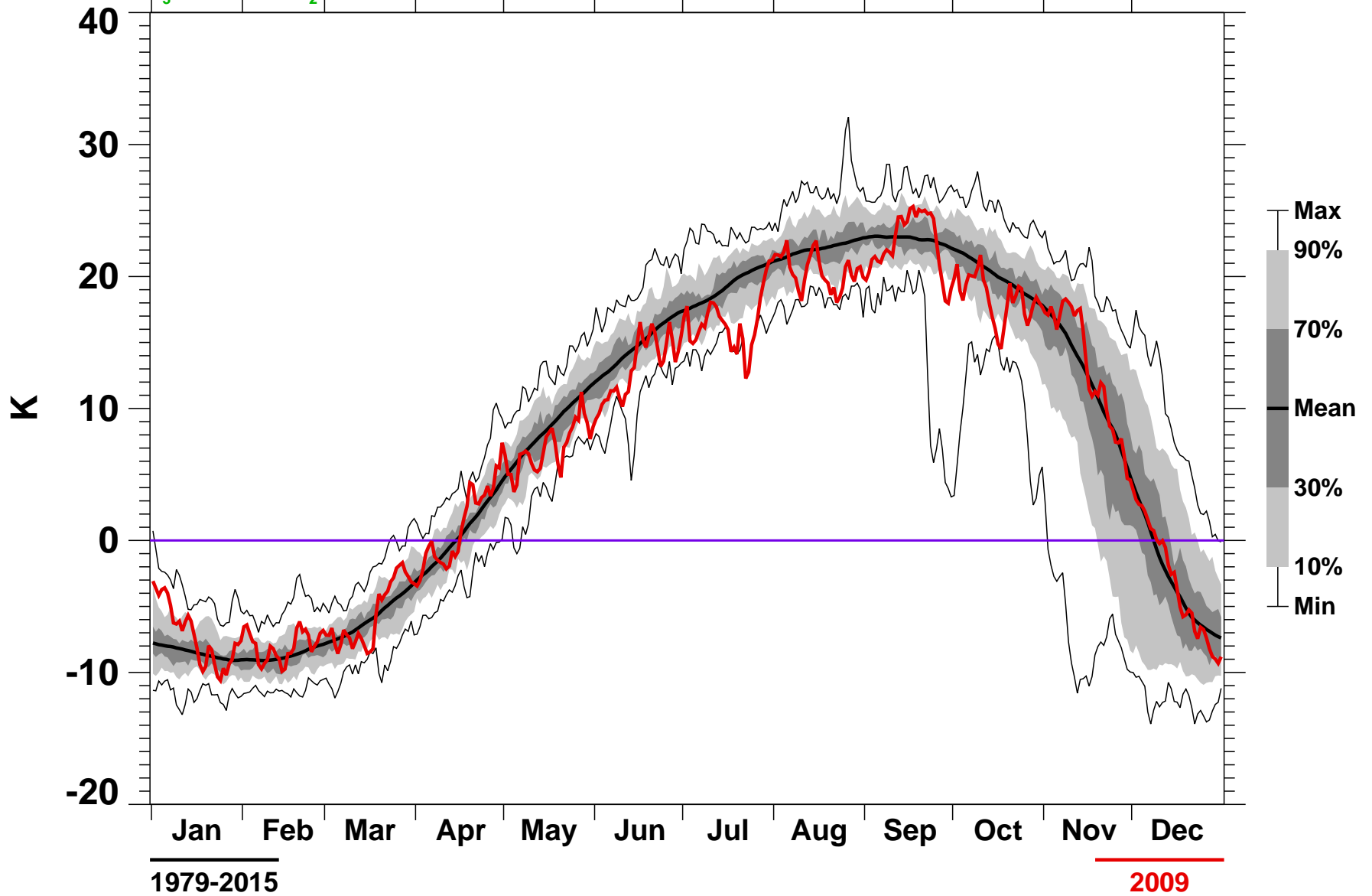


# 50-80°S Zonal Mean Temperature Gradient

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

150 hPa MERRA



1979-2015

2009