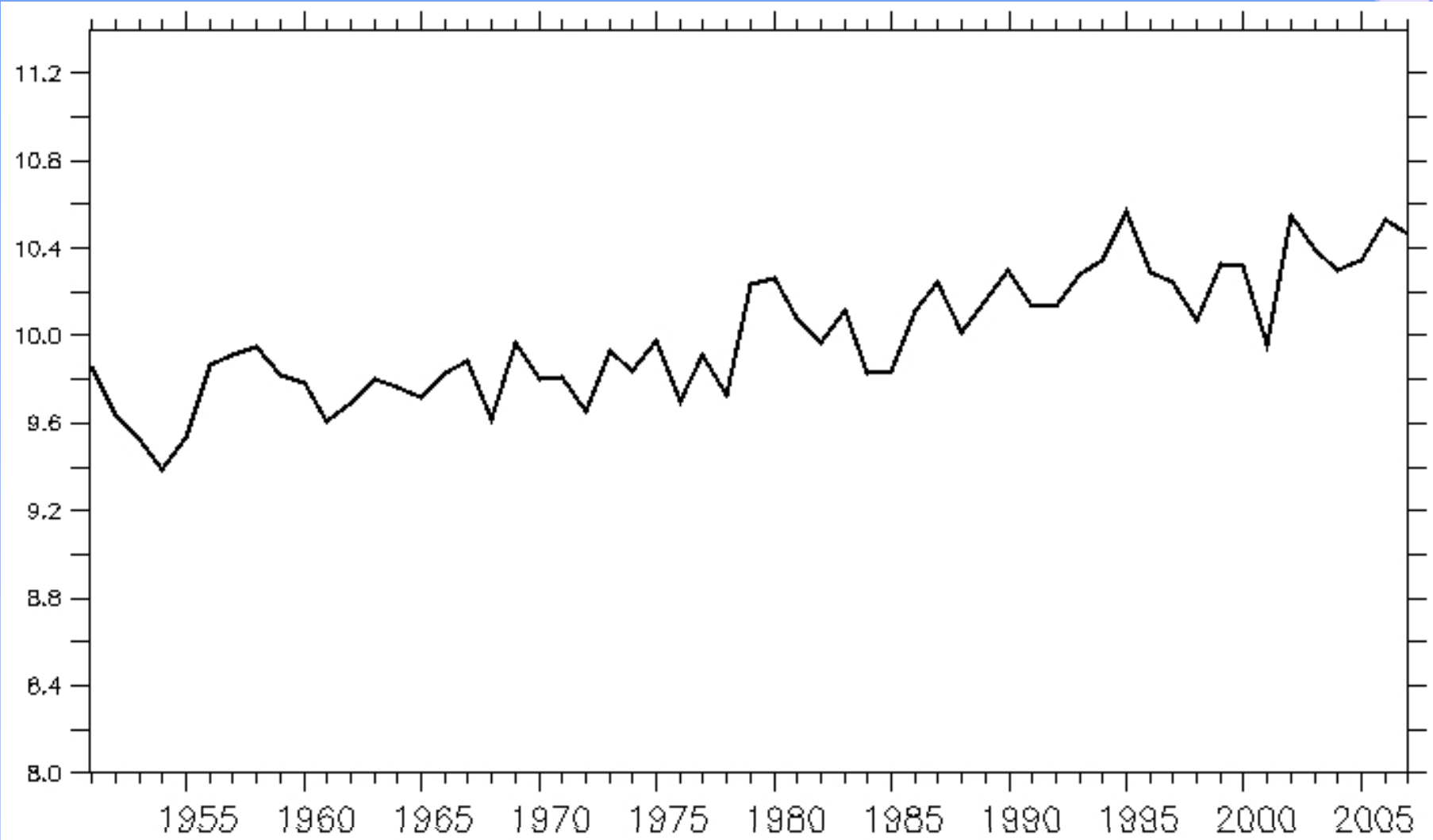


ESSENCE – signaal detectie

Andreas Sterl

- **Klimaat: ruizig**
- **Wat is signaal, wat is “ruis”?**
- **Ensemble => ruis wordt weggefilterd, signaal blijft**
- **=> analyse van het signaal**

T_{2m} - De Bilt



••••

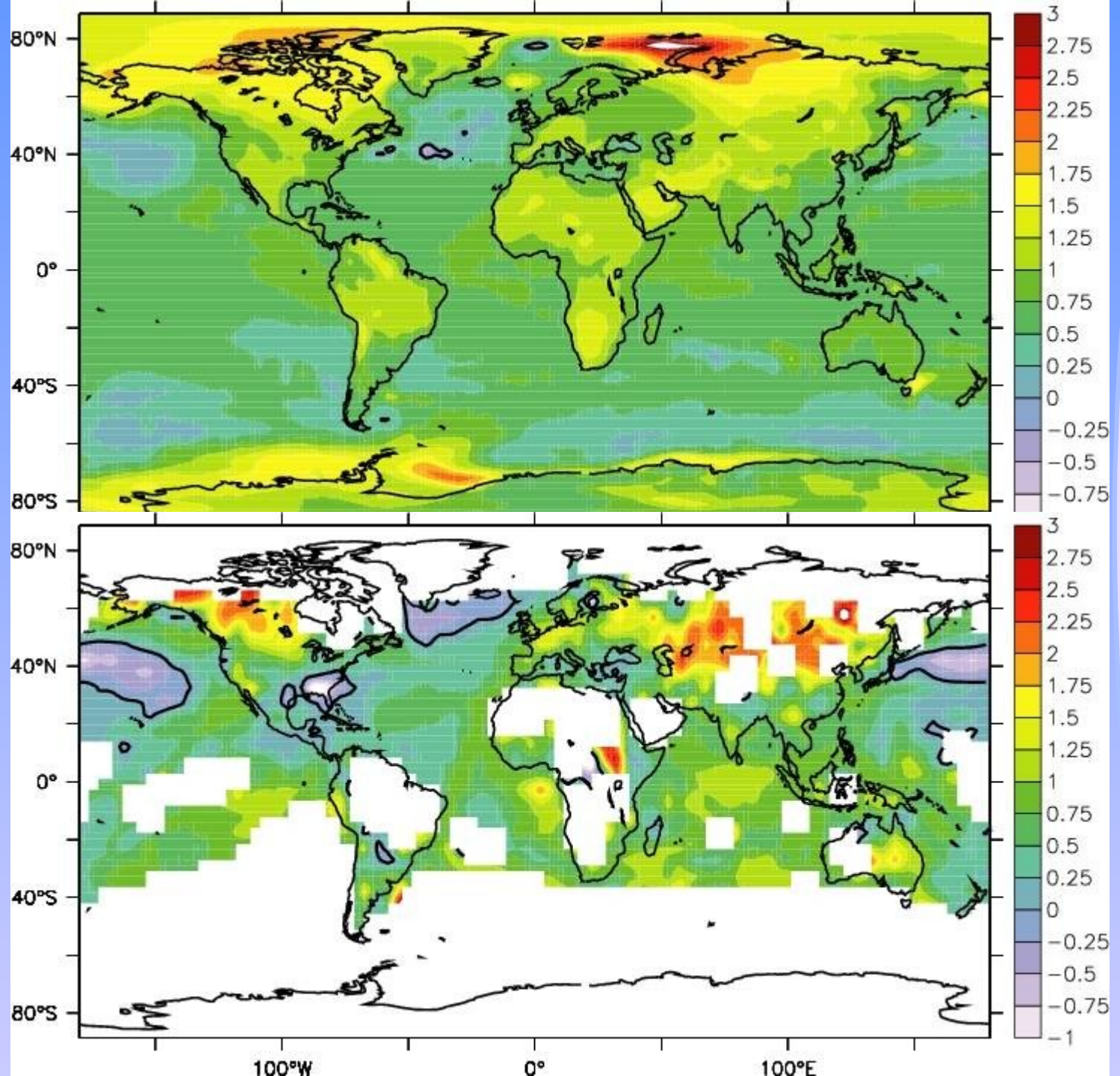
Trends – waarneming vs. model

of

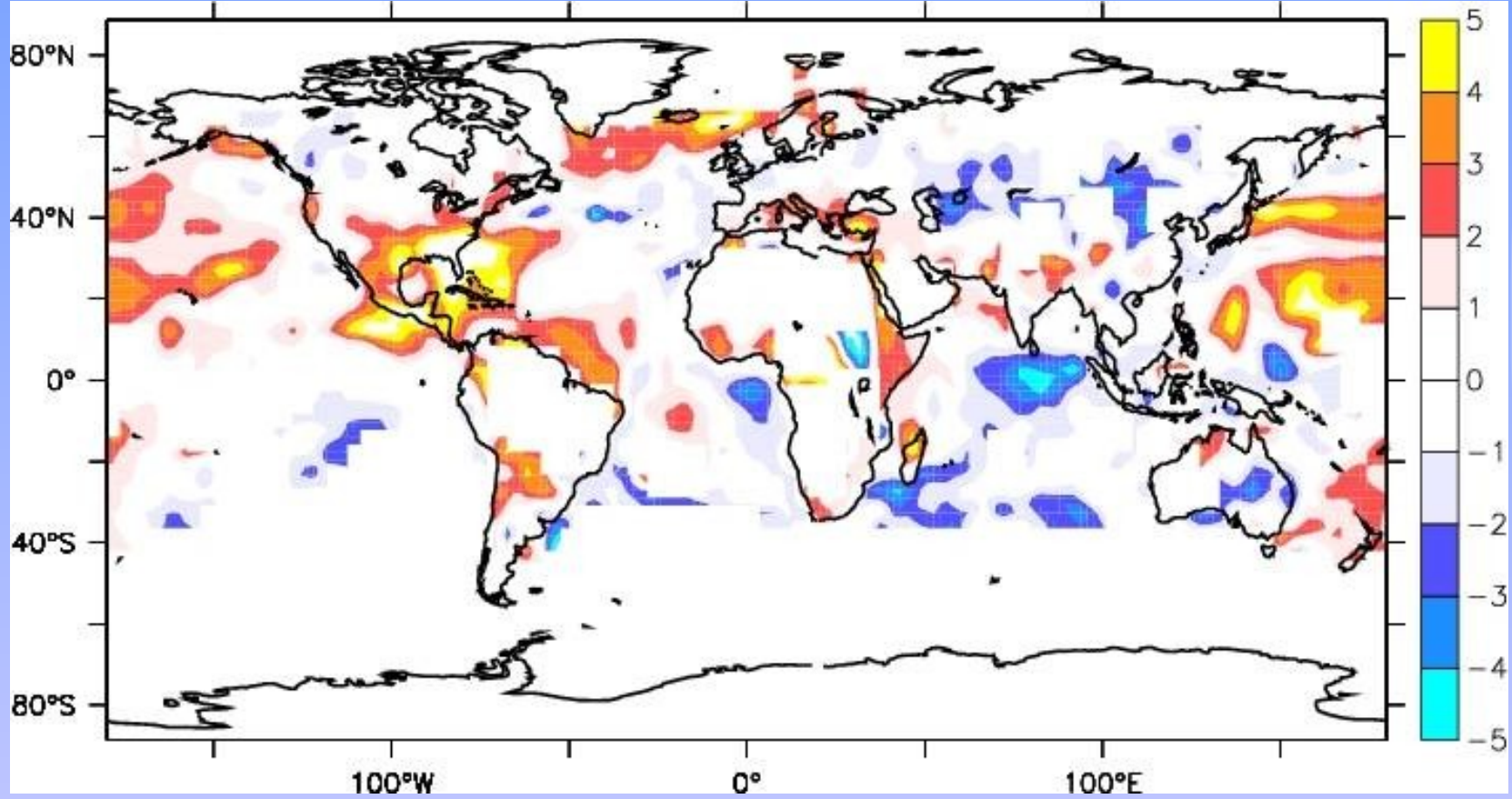
Hoe goed is het model?

••••

Trend
1950
-2006
(K/57y)



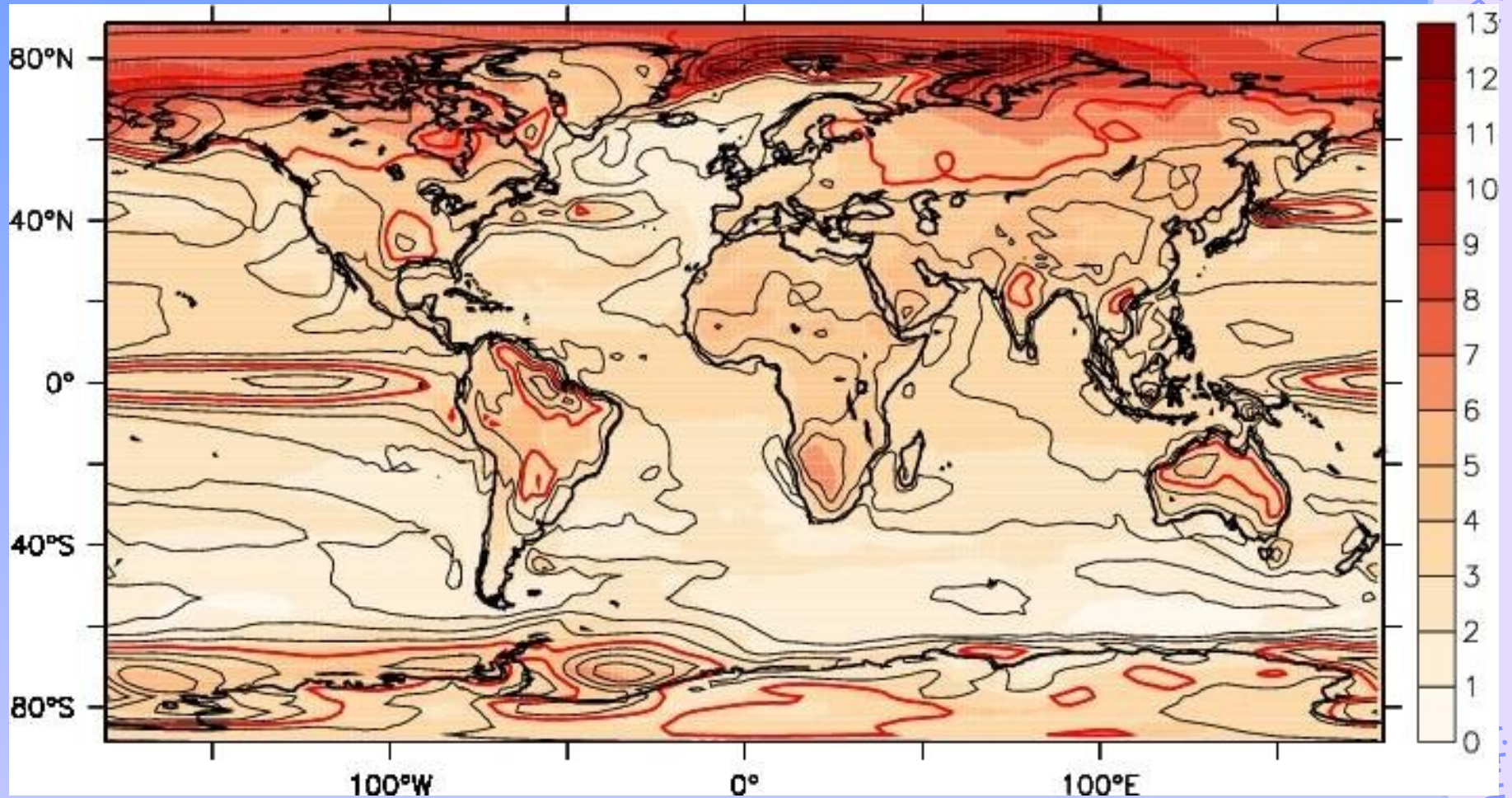
z-val trend T_{2m}



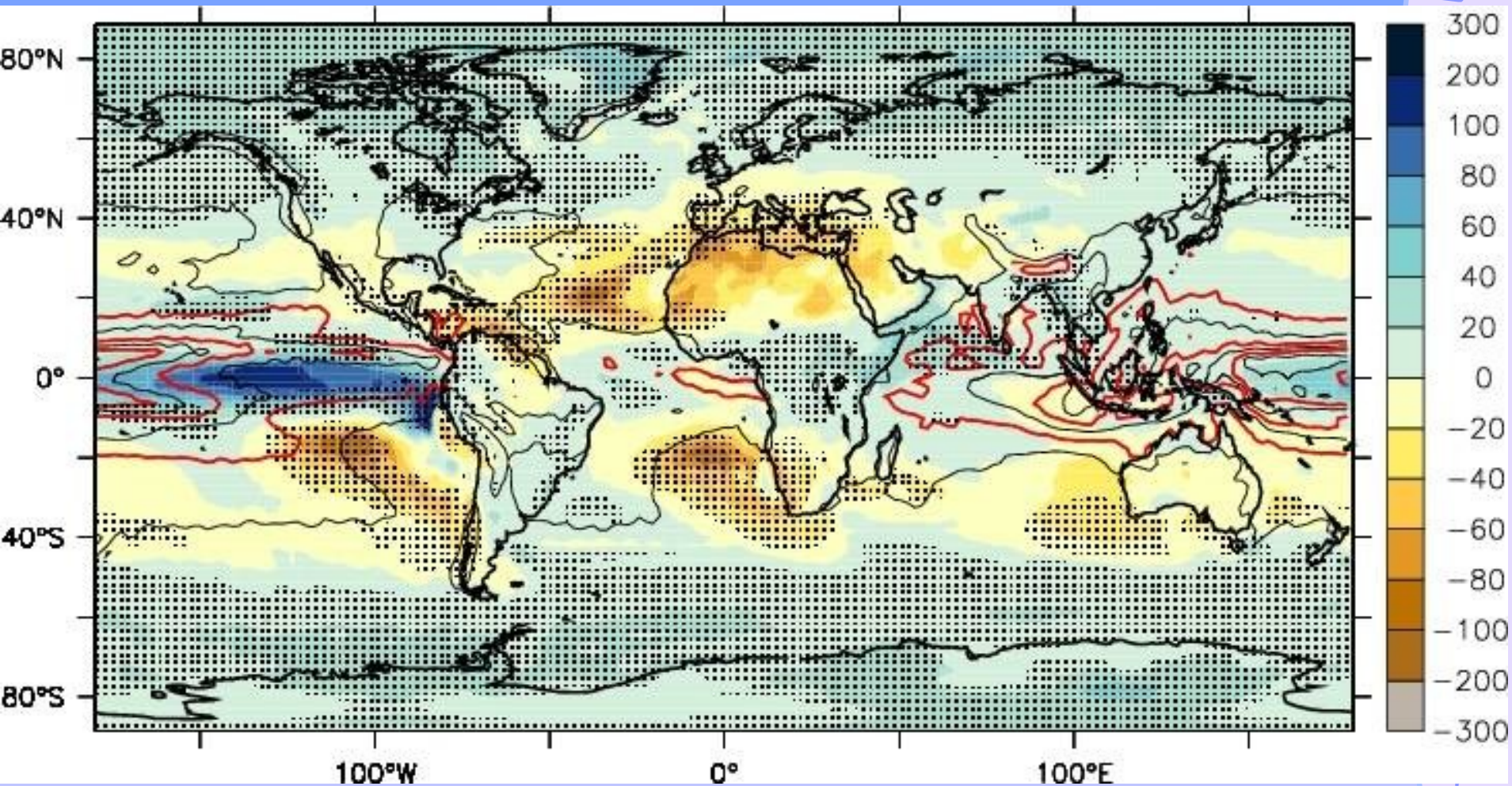
Toekomstige trends



Trend T_{2m} 2001-2100

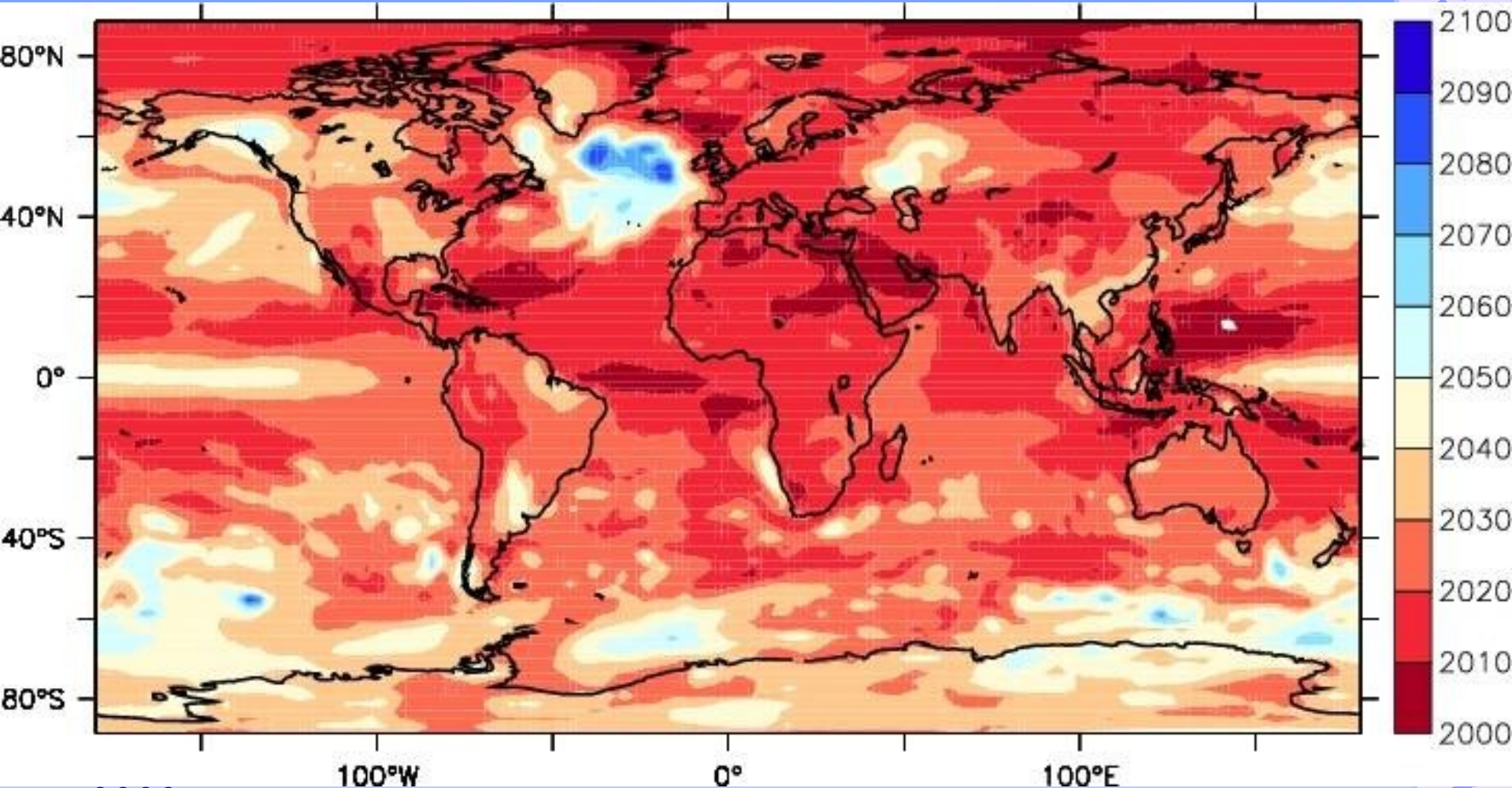


Trend neerslag 2001-2100





Trend > ruis, T_{2m}

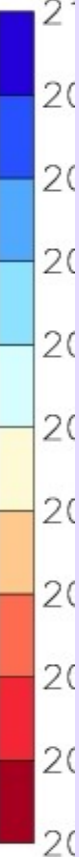




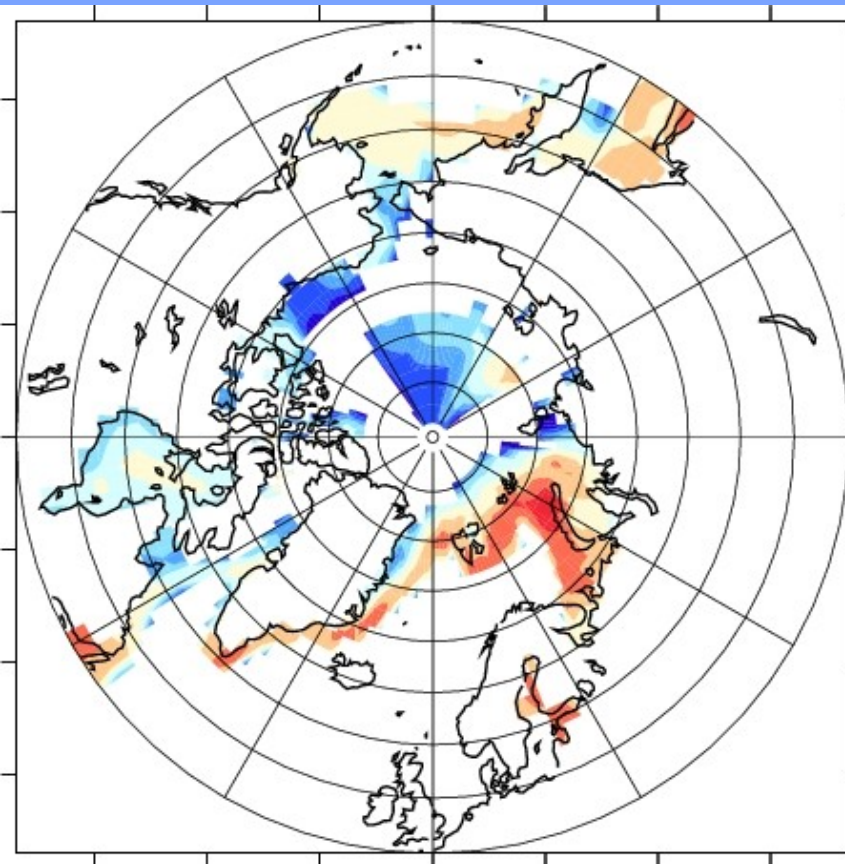
Trend > ruis, zee-ijs



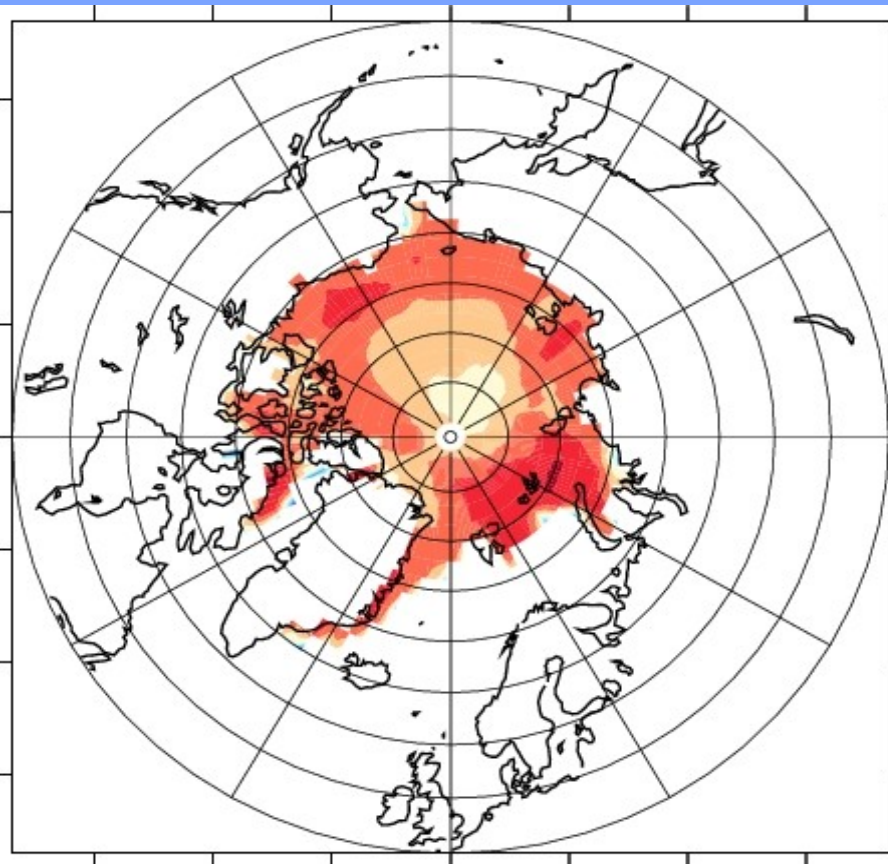
Konink



stituut



maart



september



Conclusie

- groot ensemble => ruis gereduceerd
- temperatuur signaal op sommige locaties nu al merkbaar
- Arctic rond 2040/50 in de zomer ijsvrij



Eventjes een formule:

t_{obs} – waargenomen trend

t_{mod} – gemodelleerd trend

zijn t_{obs} en t_{mod} verschillend?

$$z = \frac{|t_{\text{mod}} - t_{\text{obs}}|}{\sqrt{\frac{\sigma_{\text{mod}}^2}{n_{\text{mod}}} + \frac{\sigma_{\text{obs}}^2}{n_{\text{obs}}}}} > 2.12$$

$n_{\text{mod}} = 17$ $n_{\text{obs}} = 1$