



Royal Netherlands
Meteorological Institute
*Ministry of Infrastructure and the
Environment*

Zeespiegelstijging en wind aan de Nederlandse kust

**Andreas Sterl, Caroline Katsman
KNMI**

**Zeespiegelstijging
componenten
onzekerheden**

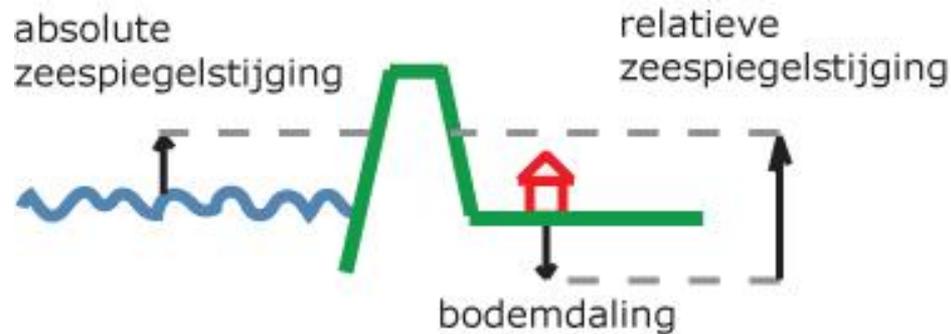
**Wind
veel wind
weinig wind**



Zeespiegelstijging



Wat is zeespiegelstijging?

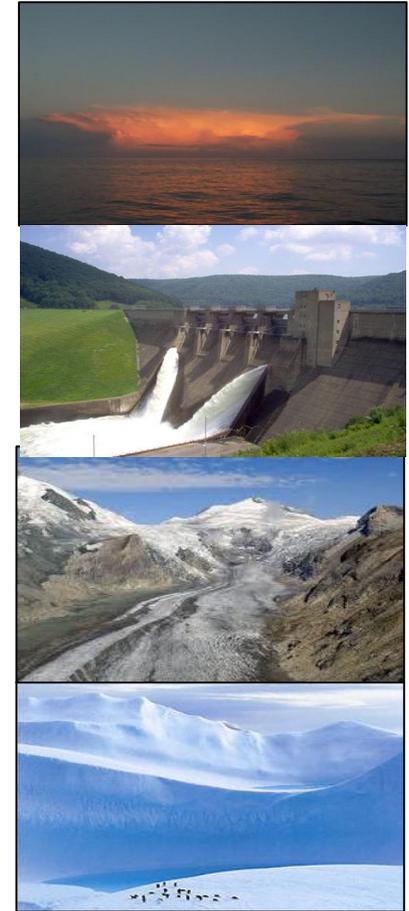


relatieve zeespiegelstijging = absolute zeespiegelstijging
+ lokale bodembeweging

absolute zeespiegelstijging: massa, volume, herverdeling

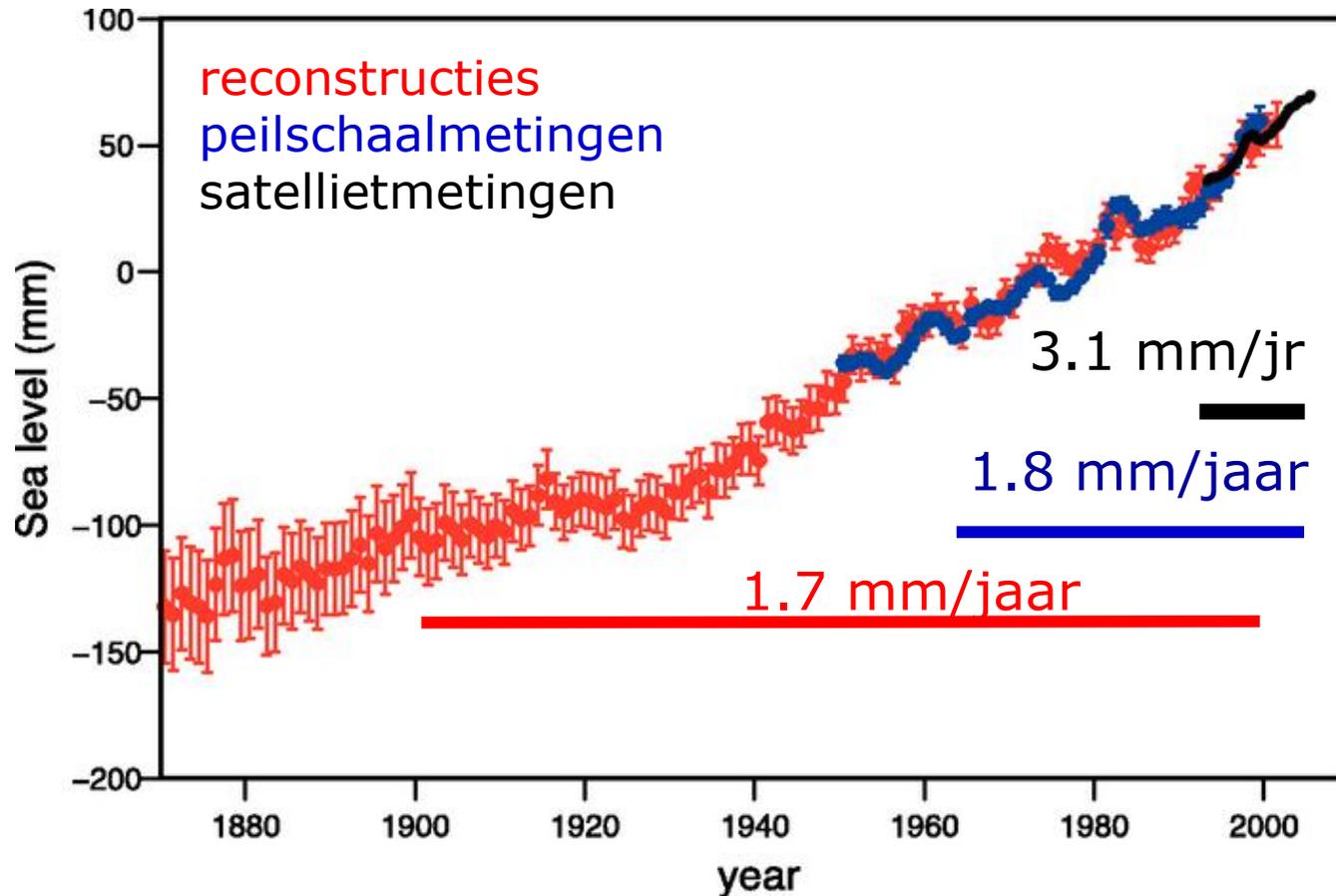


Wereldgemiddelde zeespiegelstijging



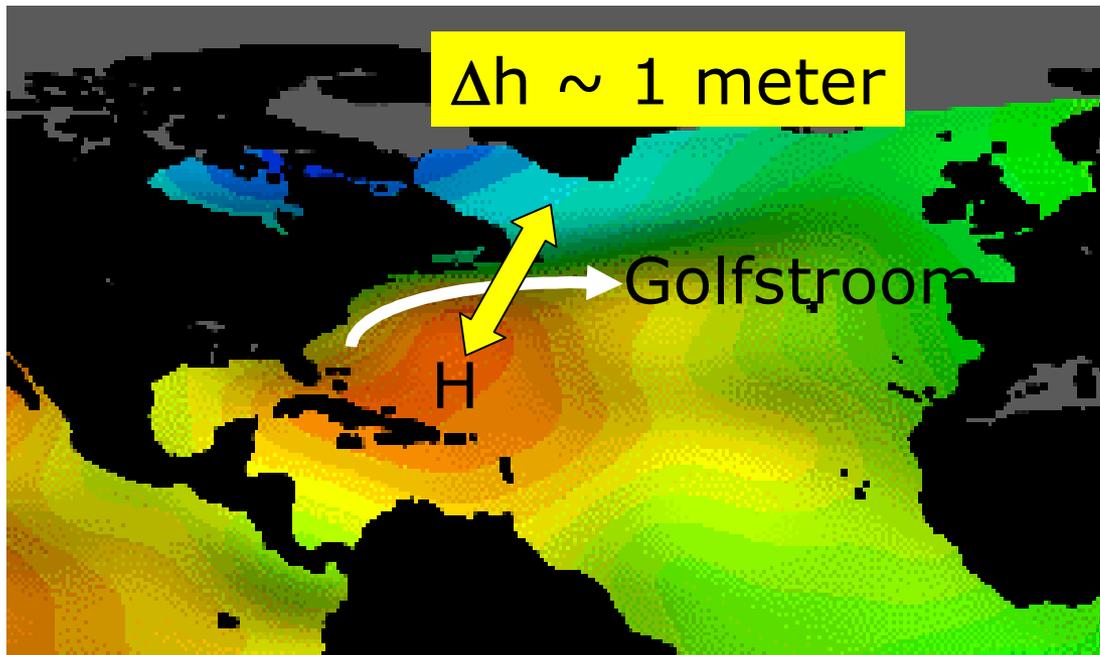


Wereldgemiddelde zeespiegelstijging





Regionale effecten



extra lokale
uitzetting/contractie

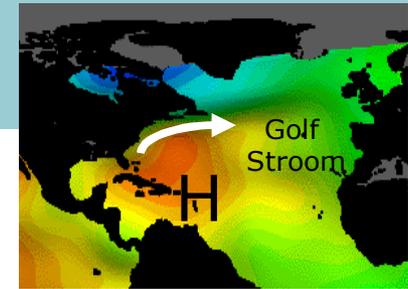
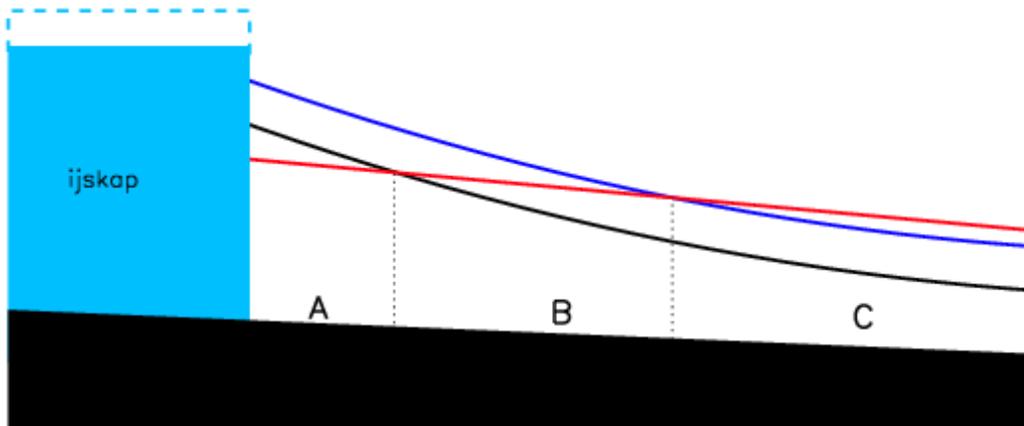




Regionale effecten

smeltwater landijs verdeelt
zich niet uniform
(zelf-gravitatie effect)

nieuw in KNMIInext

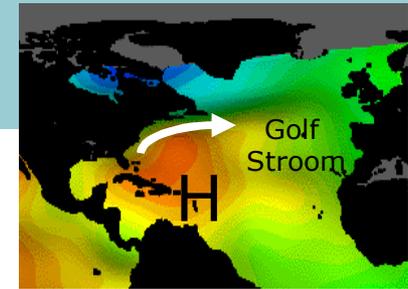
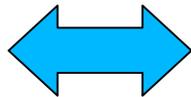




Regionale effecten

veranderingen in
opslag water op land
(+ zelf-gravitatie effect)

nieuw in KNMIInext



zelf-
gravitatie
effect



Wind



KNMI'06

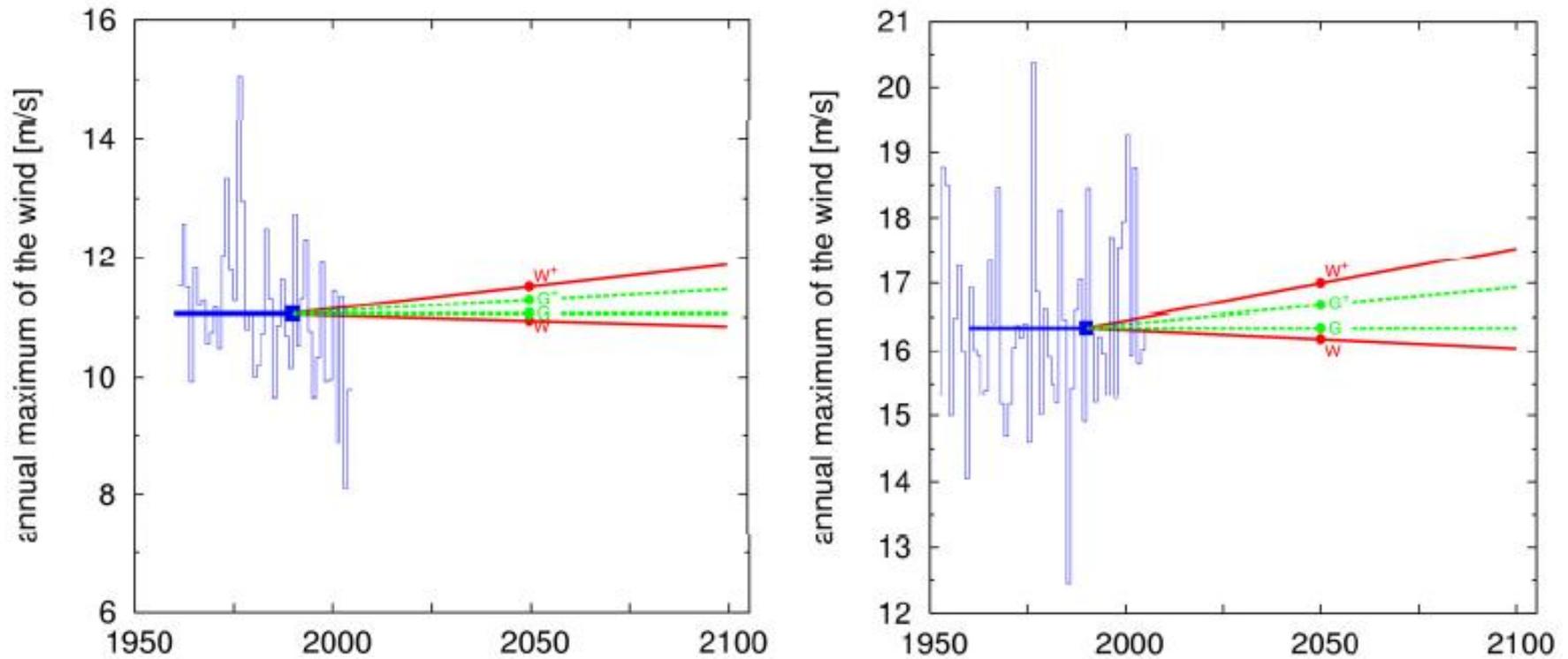
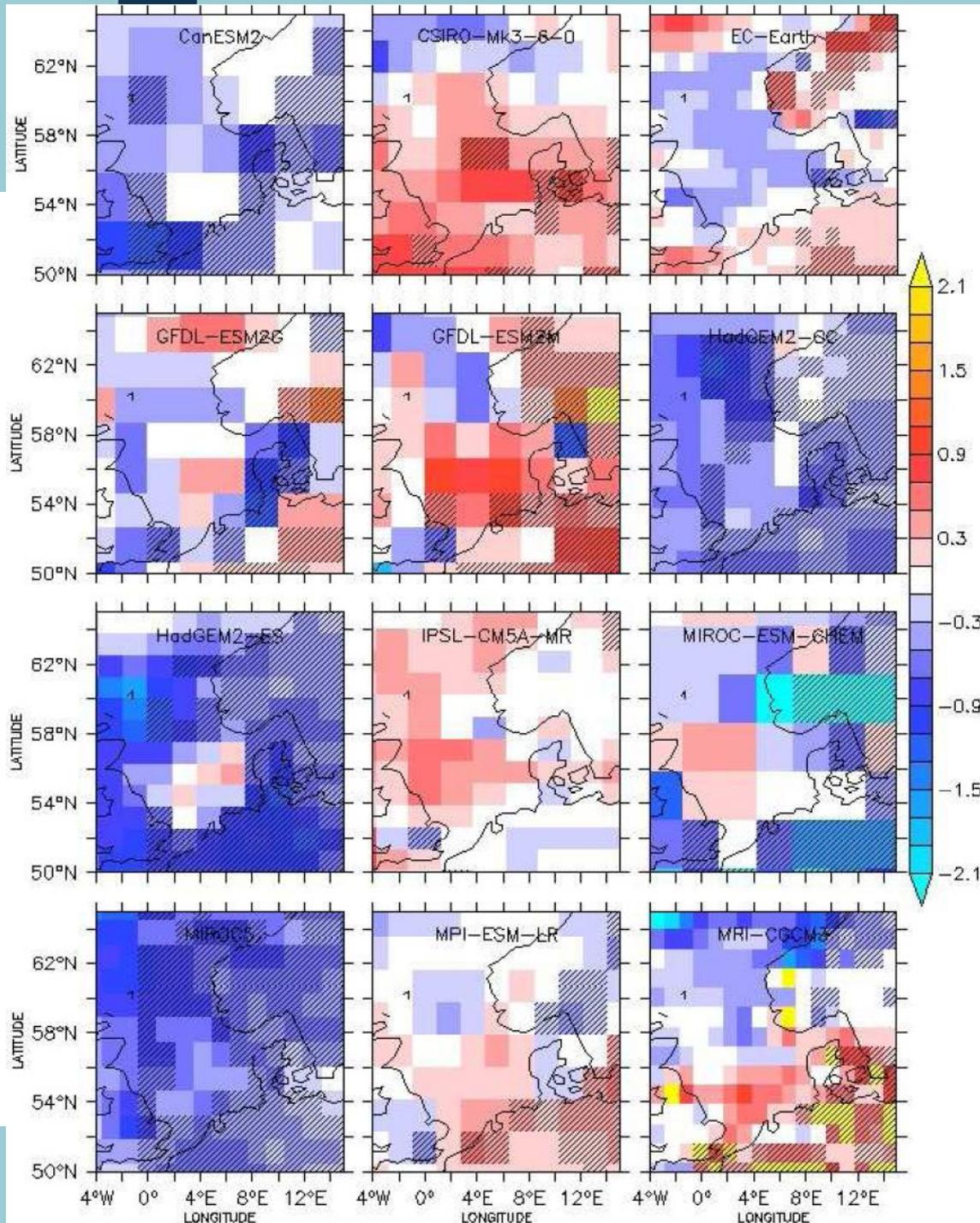


Figure 6-7: Example of annual maximum daily mean wind speed for De Bilt (left) and IJmuiden (right). Also shown are the scenario values for 2050.

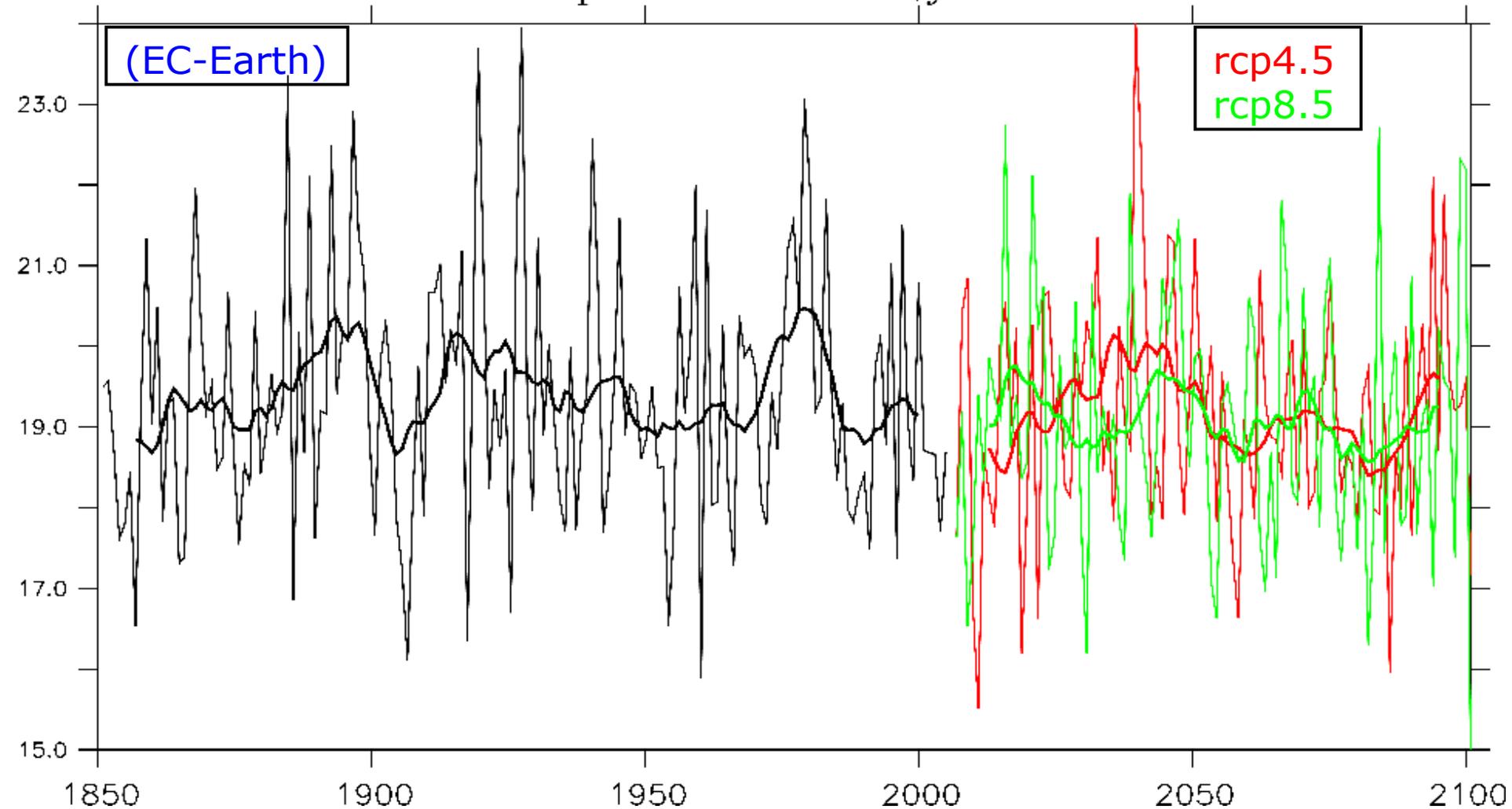
Verandering
jaar-maxima
van de
dagelijks
gemiddelde
windsnelheid
gedurende
21de eeuw
(rcp8.5)



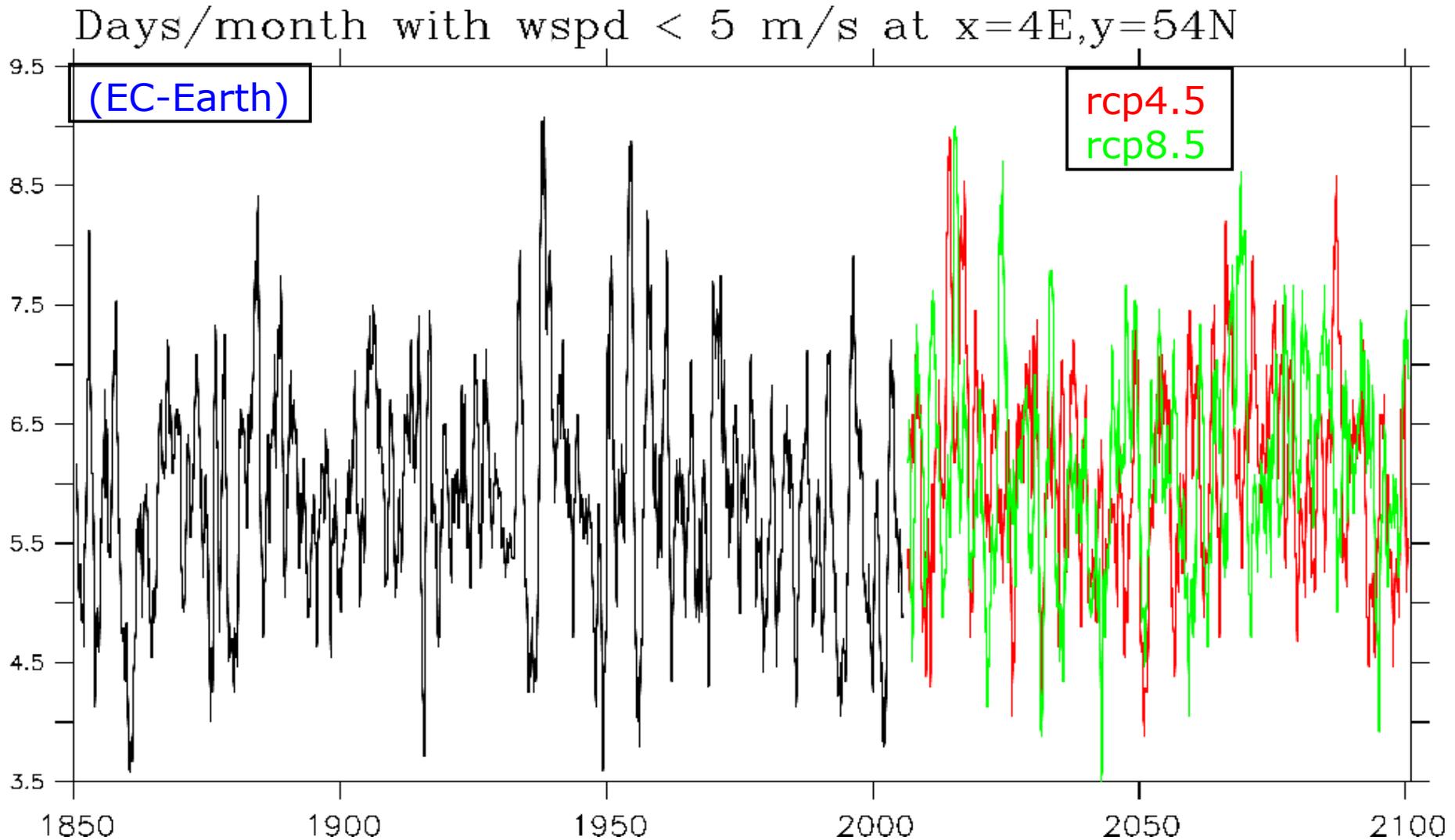
High winds



Annual max wind speed at $x=4E, y=54N$



Low winds





Voor zover: geen veranderingen in windklimaat

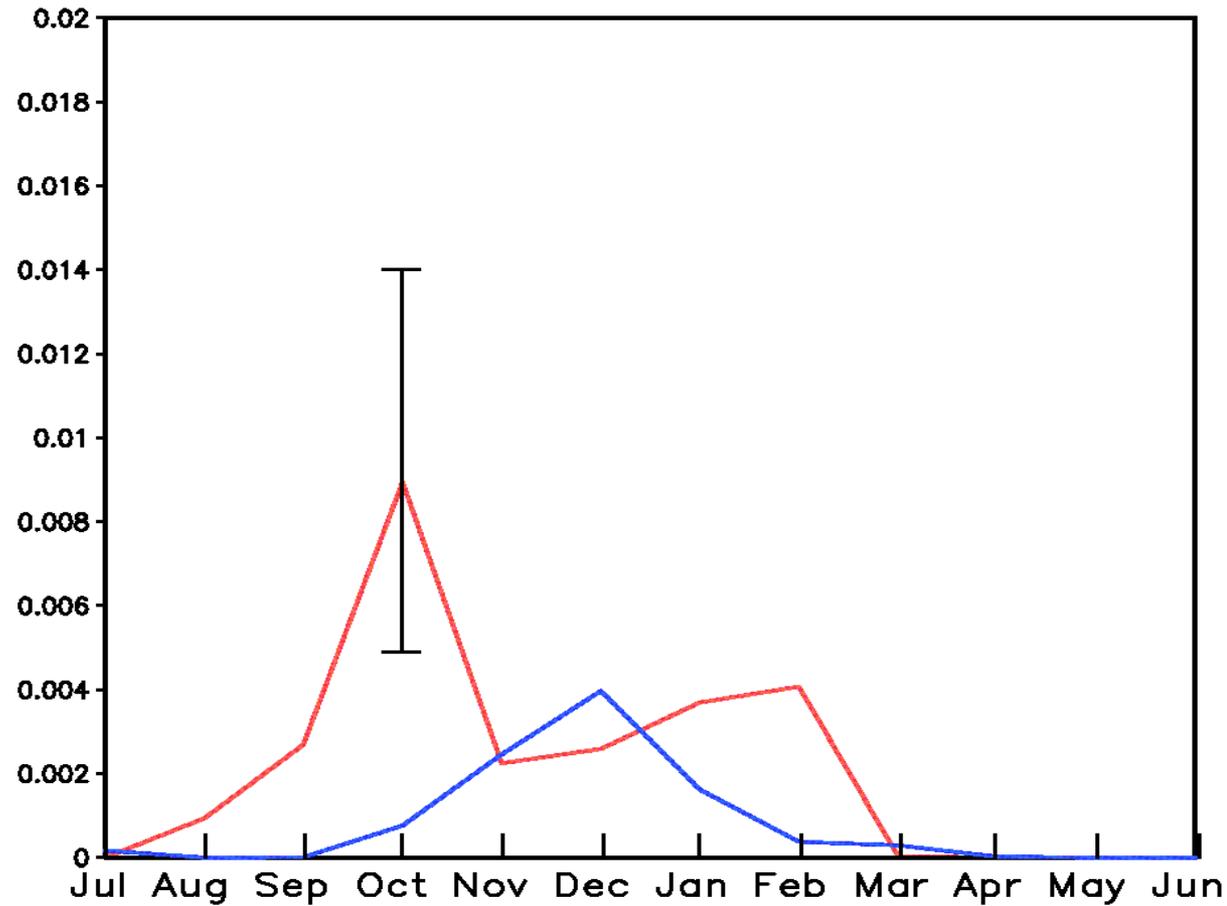
...



Maar ...

EC-Earth run bij hoge resolutie (25km), maar ongekoppeld:
Toename van zware stormen, met name in het vroege najaar

WSP10 North Sea Beaufort 11–12



Frequency distribution of 3-hourly 10m windspeed



Tropische stormen op de Noordzee?

