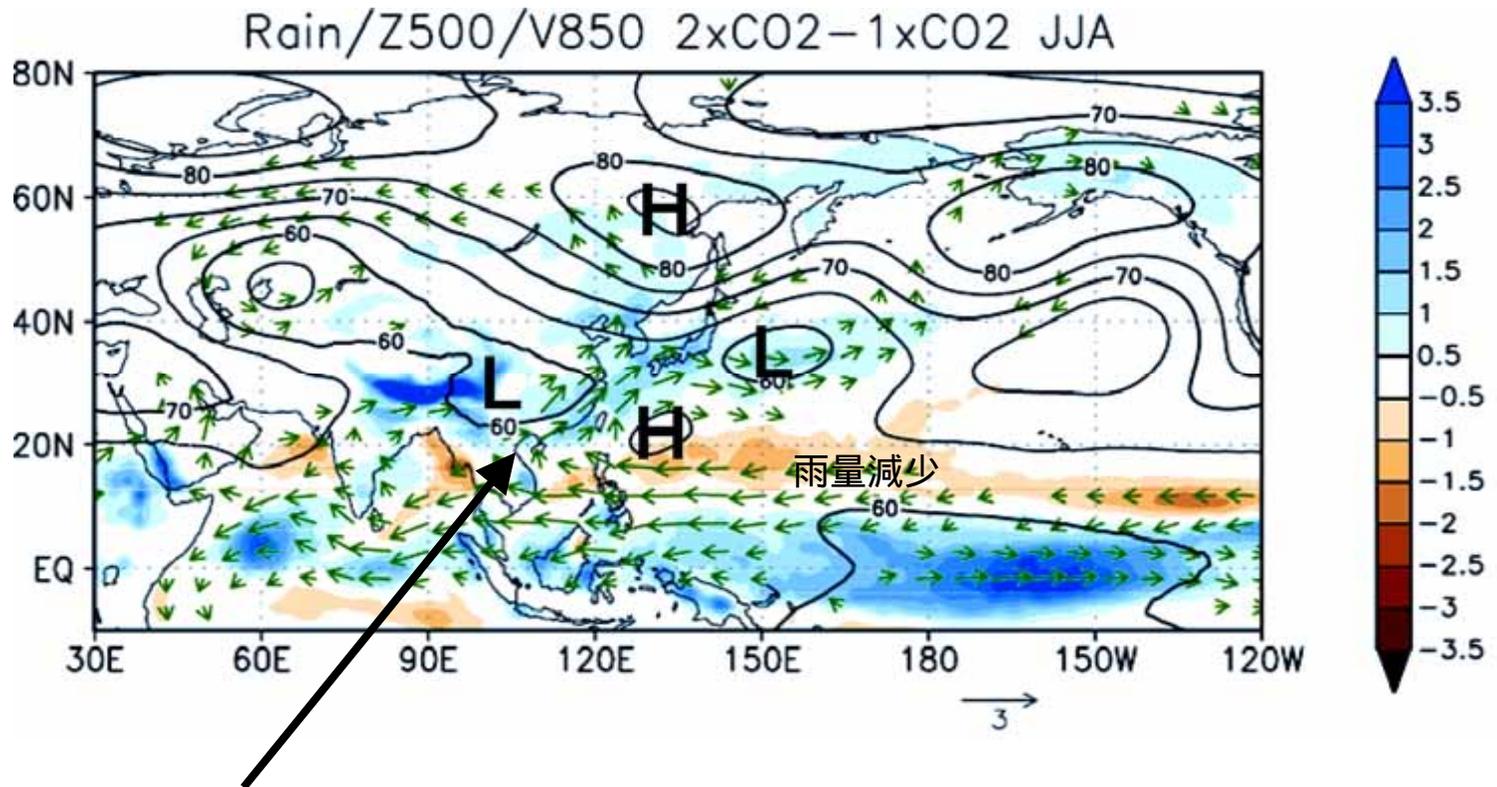


How about a climate in 2070(doubling CO2)?

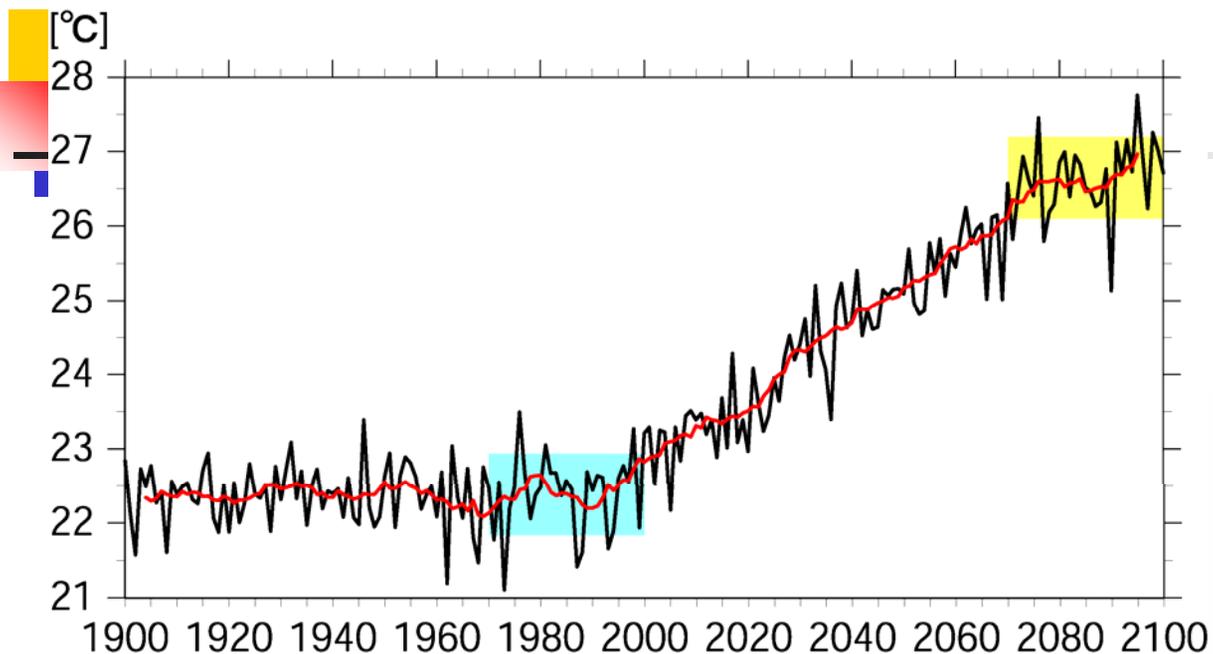
Rainfall Increase



Ranfall increases in blue region.

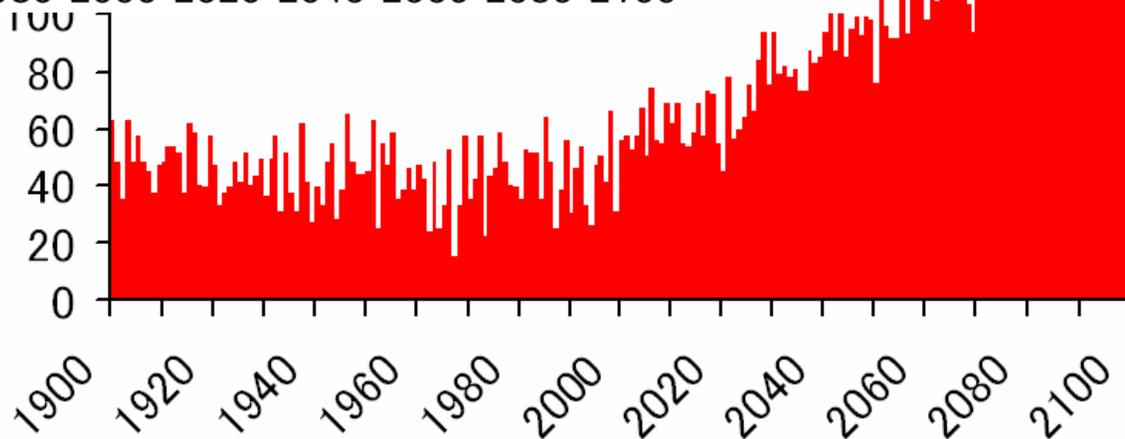
Average Temperature Increase is about 2.5 .

日本の真夏日日数と夏季平均気温の変化

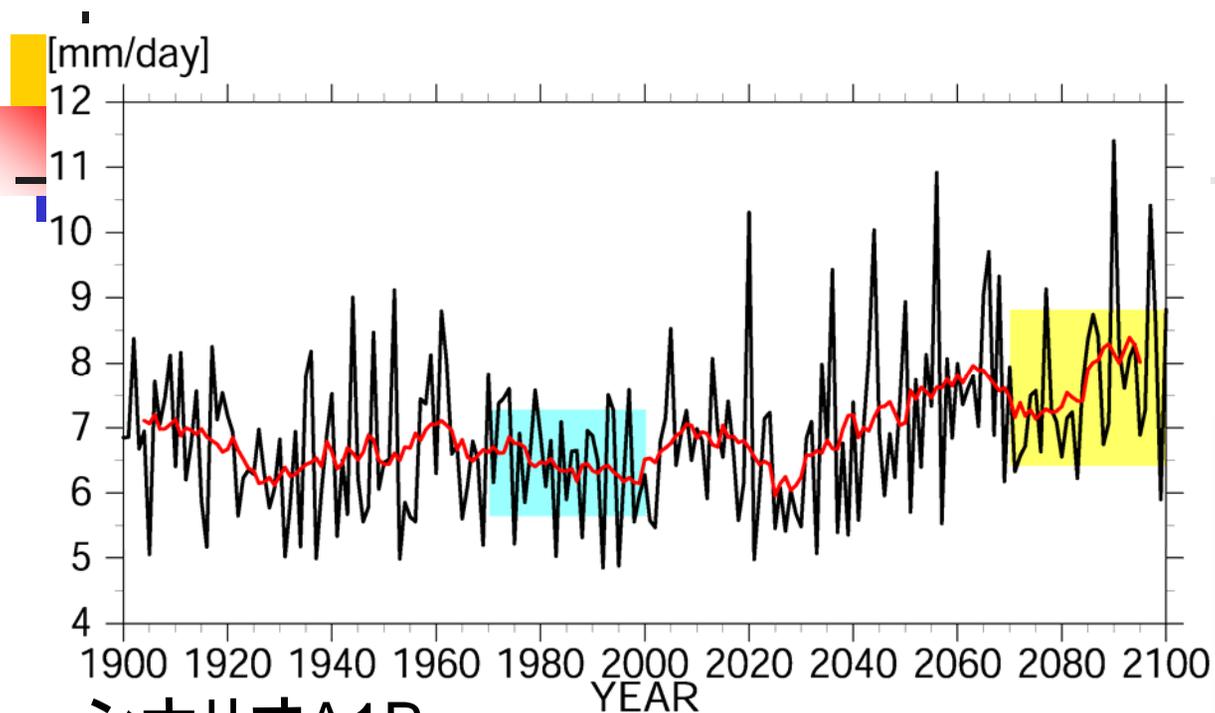


年々の変動幅
はほとんど変化
しない

シナリオA1B
全球平均気温は
100年間で
4.0 上昇

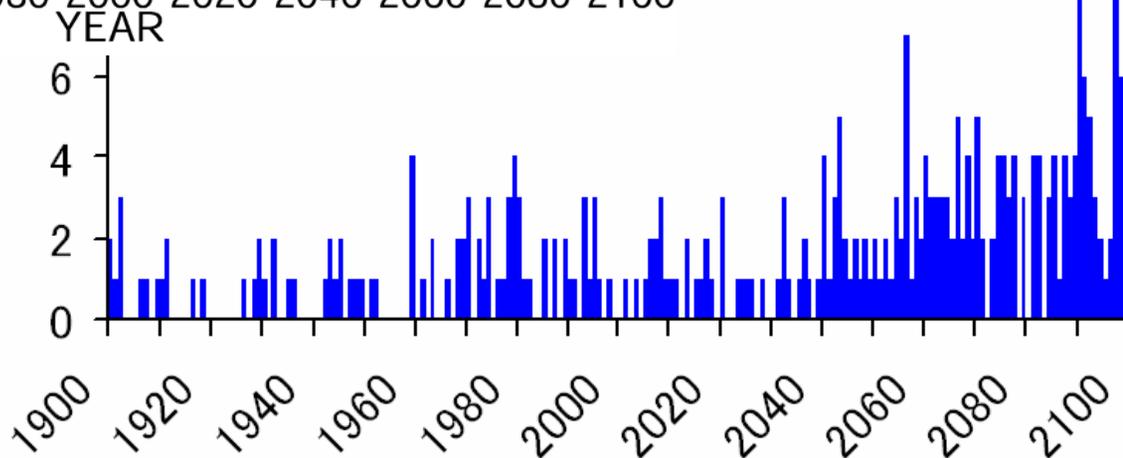


日本の夏季豪雨日数と夏季平均降水量の変化



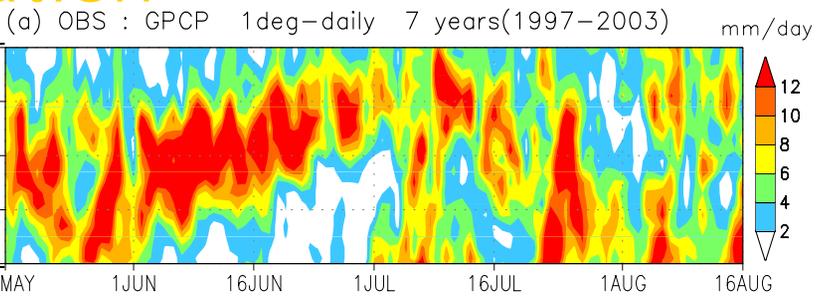
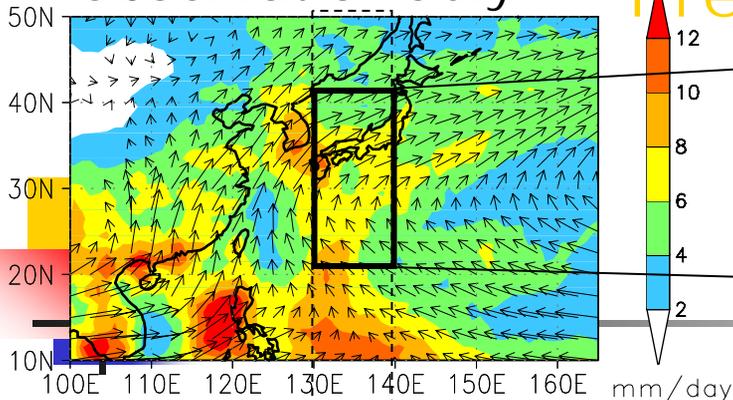
— 年々の変動幅
も大きくなる

シナリオA1B
全球平均降水量
は100年間で
6.4%増加

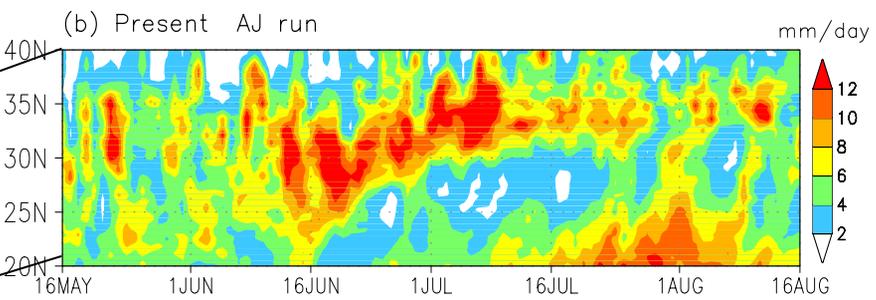
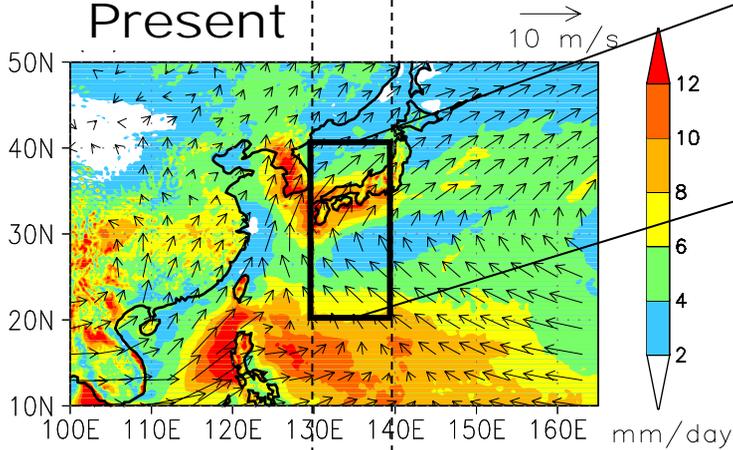


Observation July

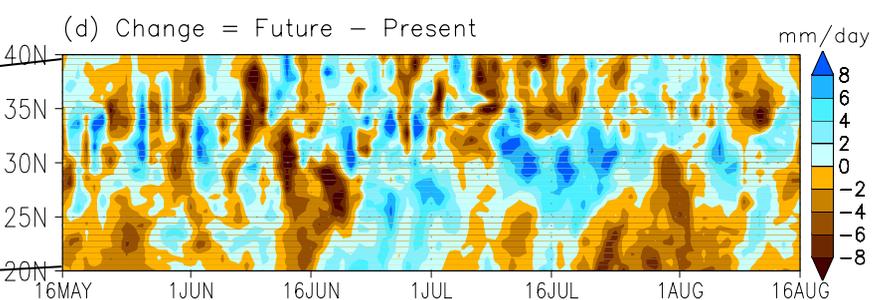
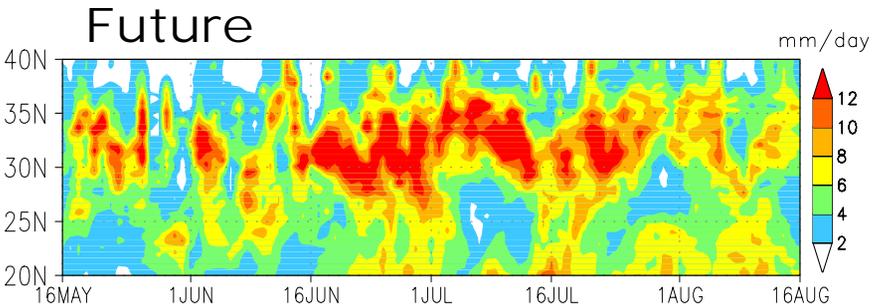
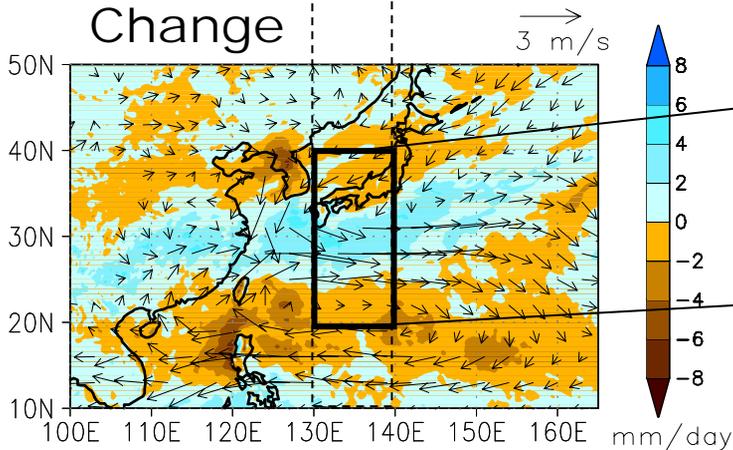
Precipitation



Present



Change

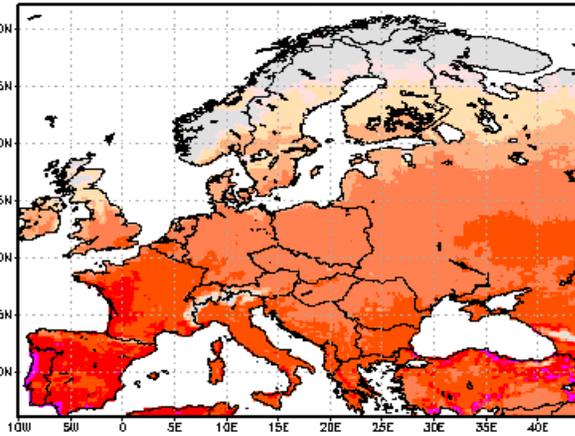


May June July

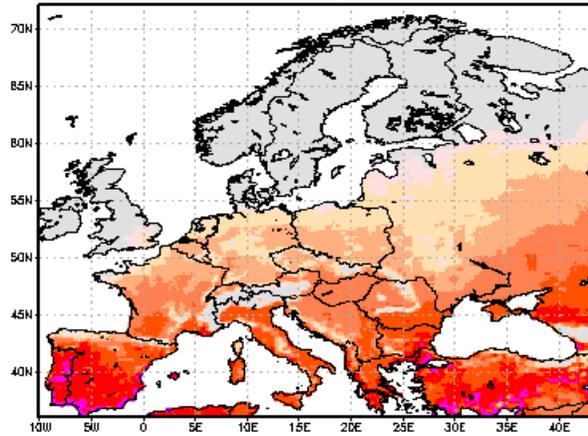
Changes in extreme temperatures

summer days

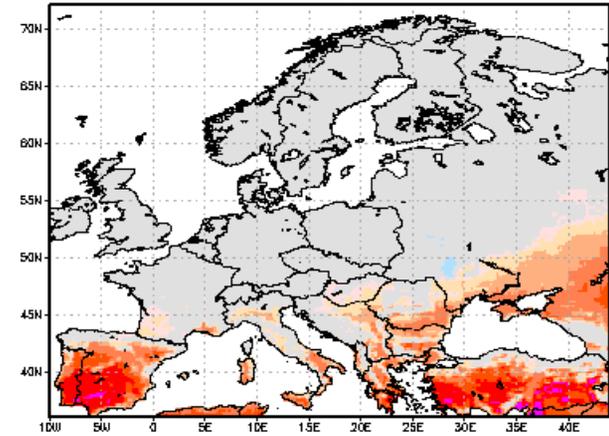
$T_{max} \geq 25.0$ [days/year]



$T_{max} \geq 30.0$ [days/year]

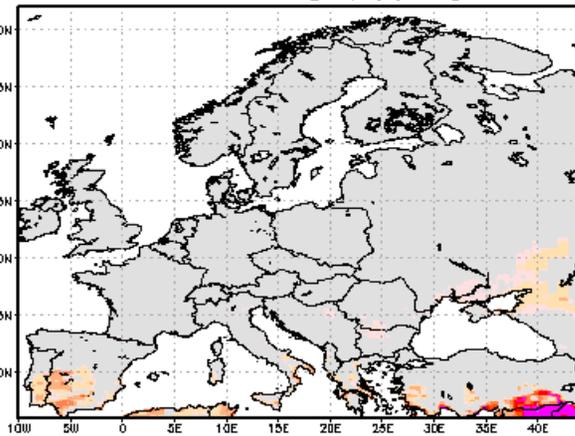


$T_{max} \geq 35.0$ [days/year]



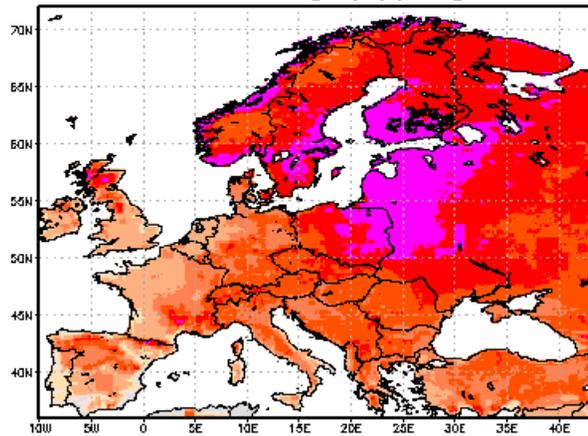
tropical nights

$T_{min} \geq 25.0$ [days/year]



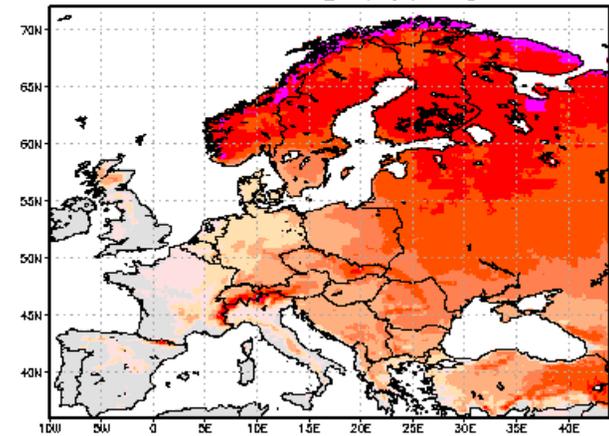
frost days

$T_{min} < 0.0$ [days/year]



winter days

$T_{max} < 0.0$ [days/year]



Observation

(GPCP-1DD)

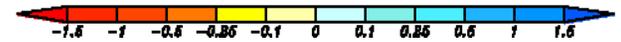
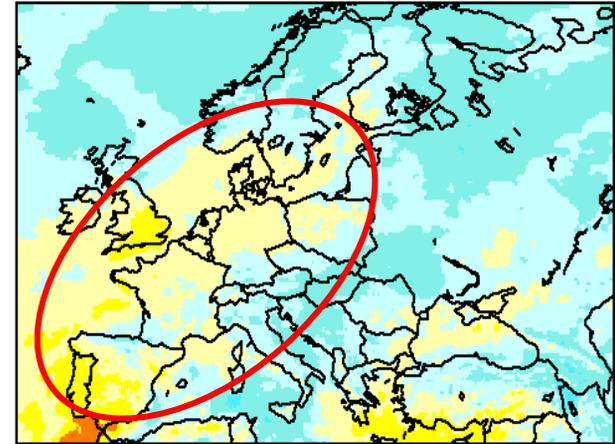
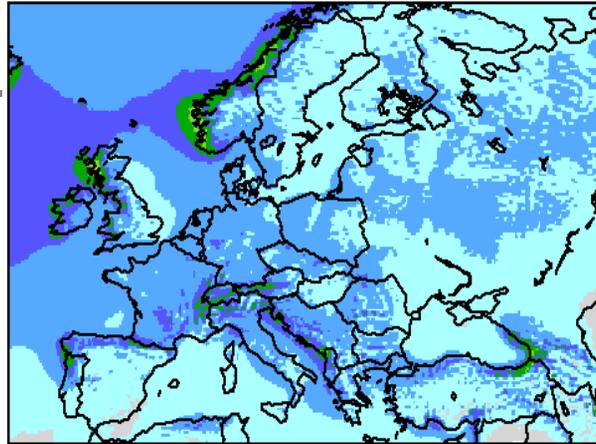
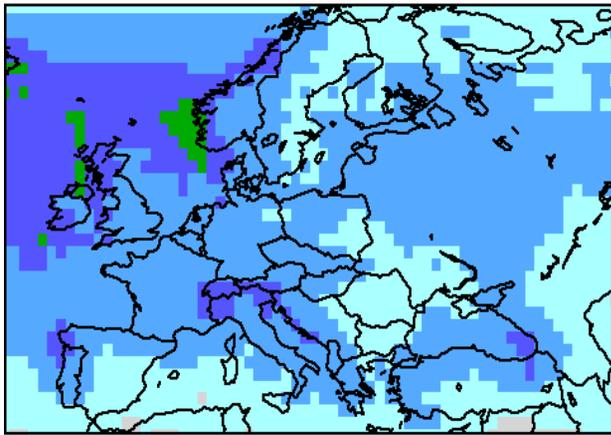


Model(TL959)

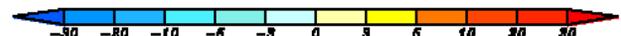
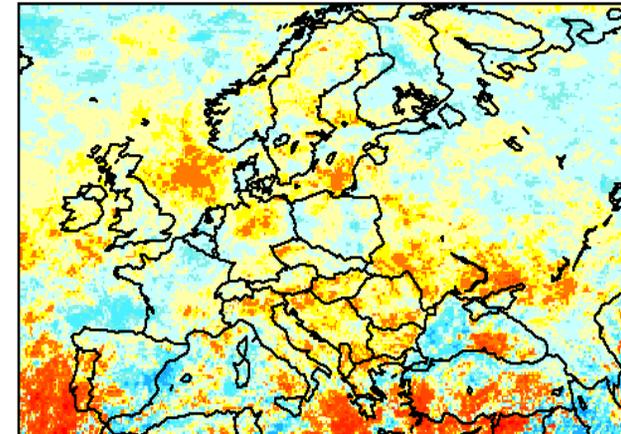
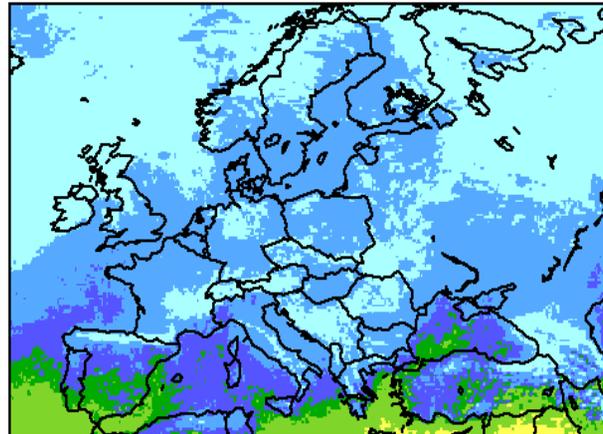
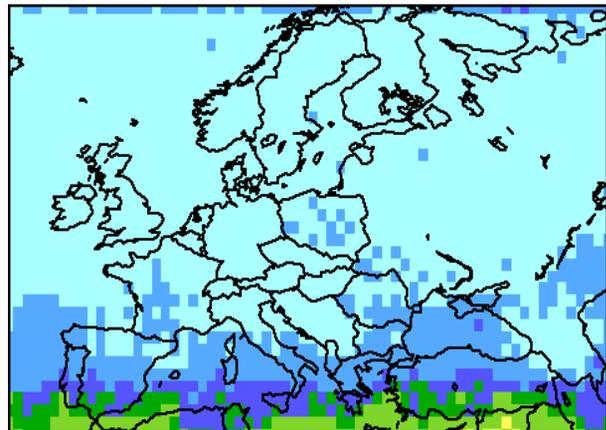
Present

future change

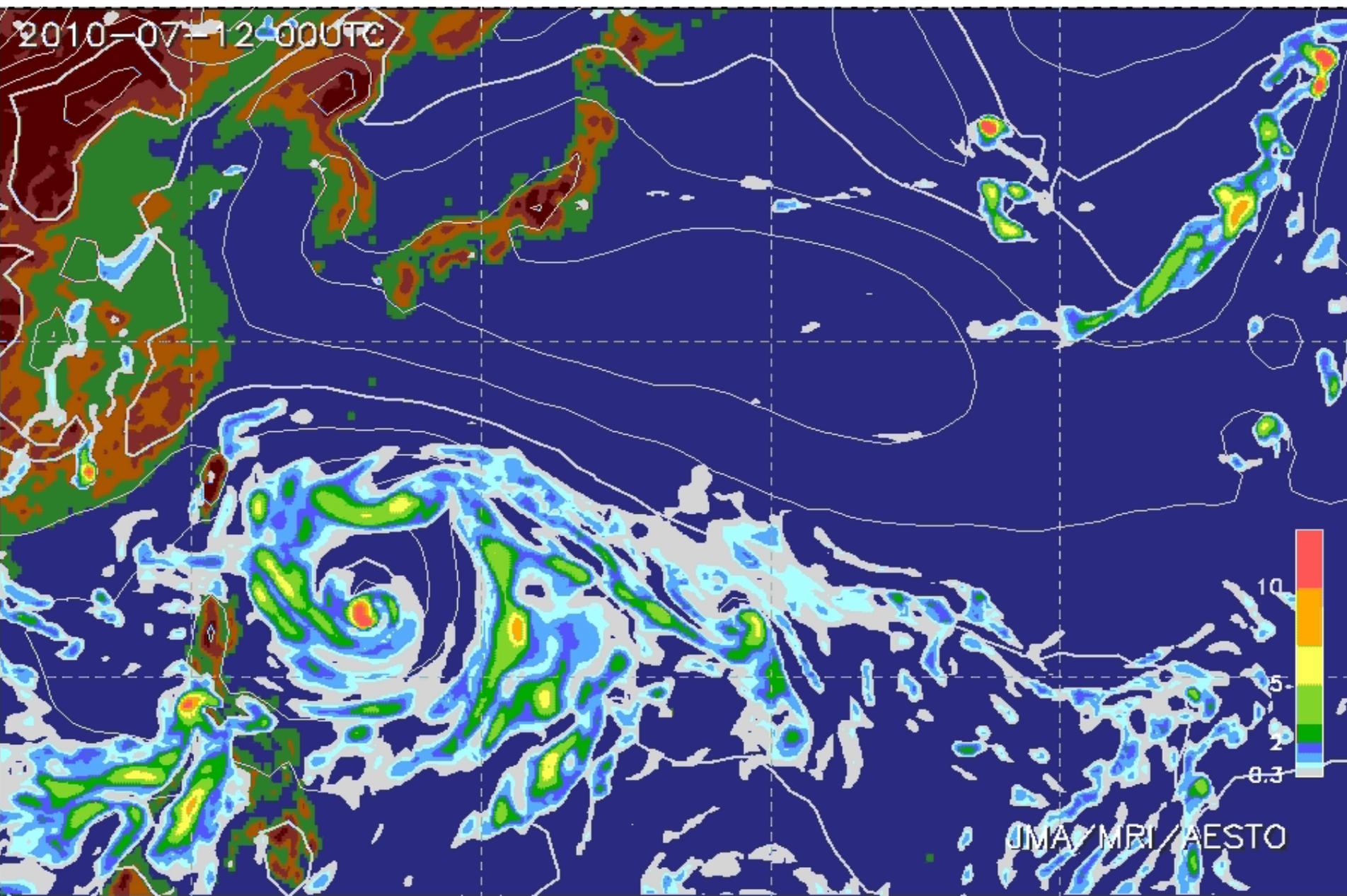
Daily precipitation



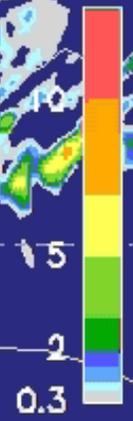
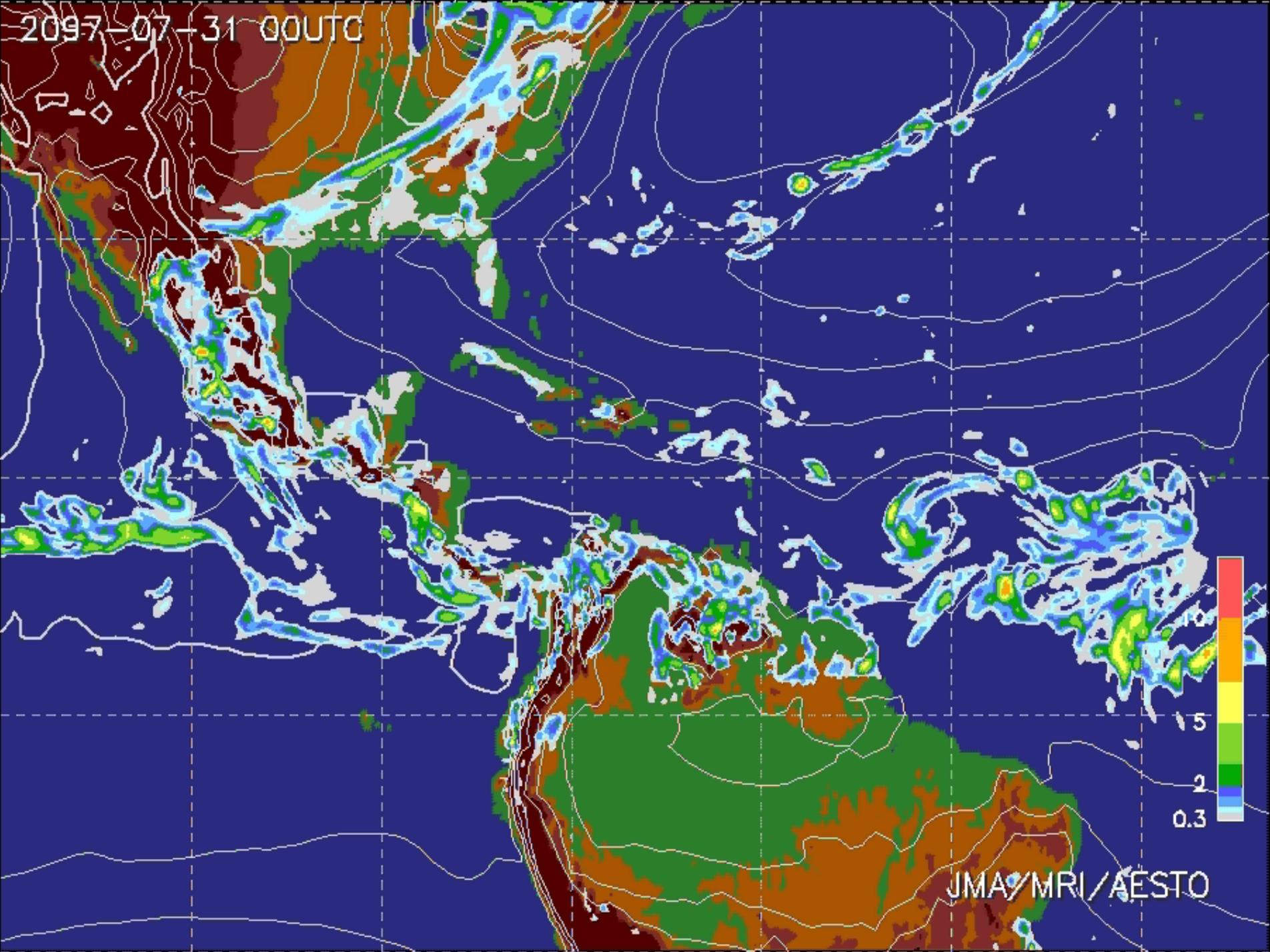
Maximum number of consecutive dry days



An extremely intense typhoon appears in the future expt. (AS) with MIROC SST (max sfc wind 68.8 m/s, CP 877.6 hPa)



2097-07-31 00UTC

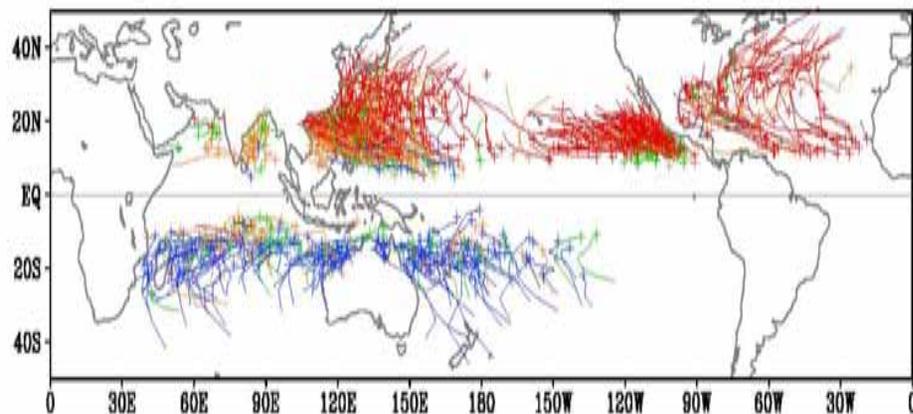


JMA/MRI/AESTO

Tropical cyclone tracks

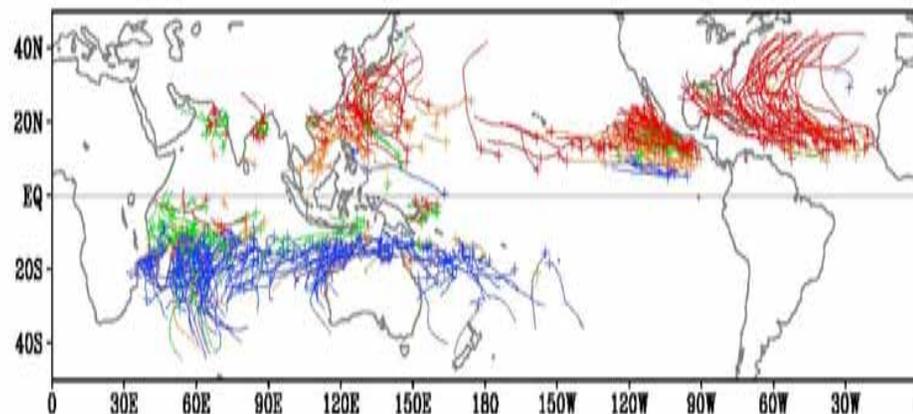
Observation 1979–1988

10 years



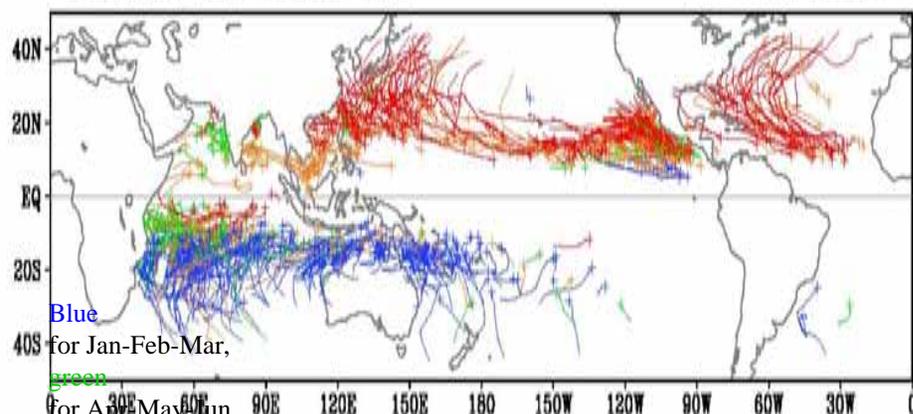
Future expt. (AK) with MRI Δ SST

10 years



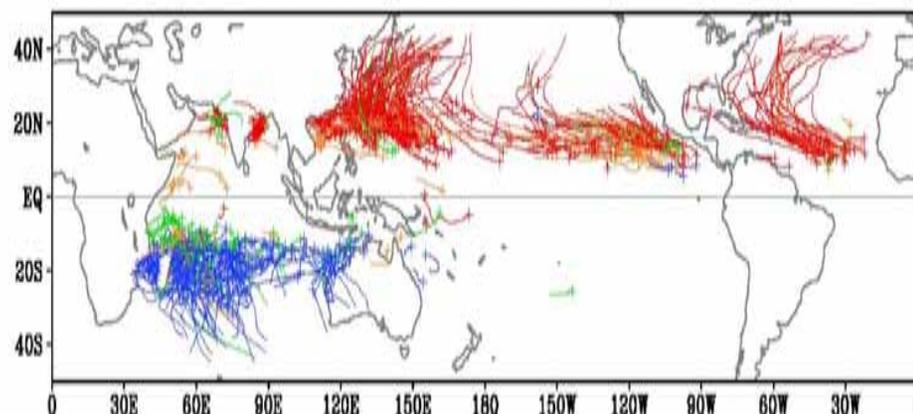
Present-day expt. (AJ)

10 years



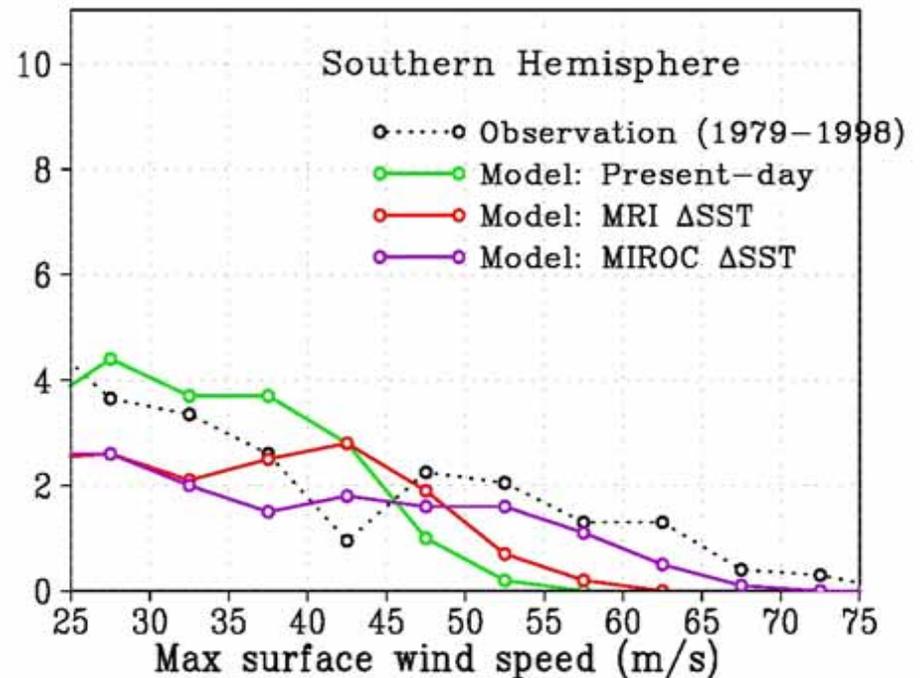
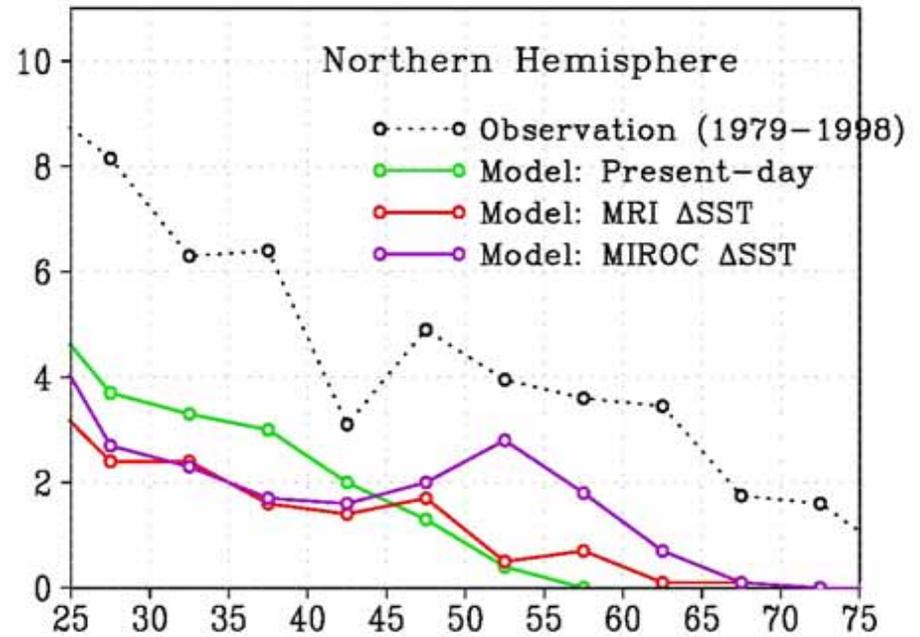
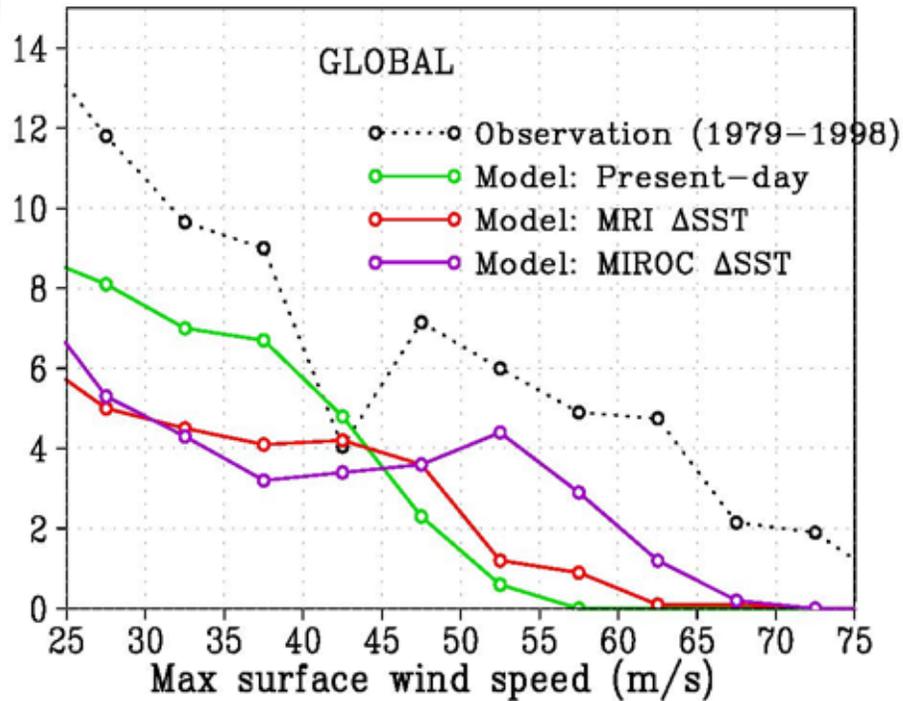
Future expt. (AS) with MIROC Δ SST

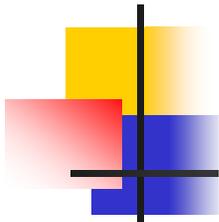
10 years



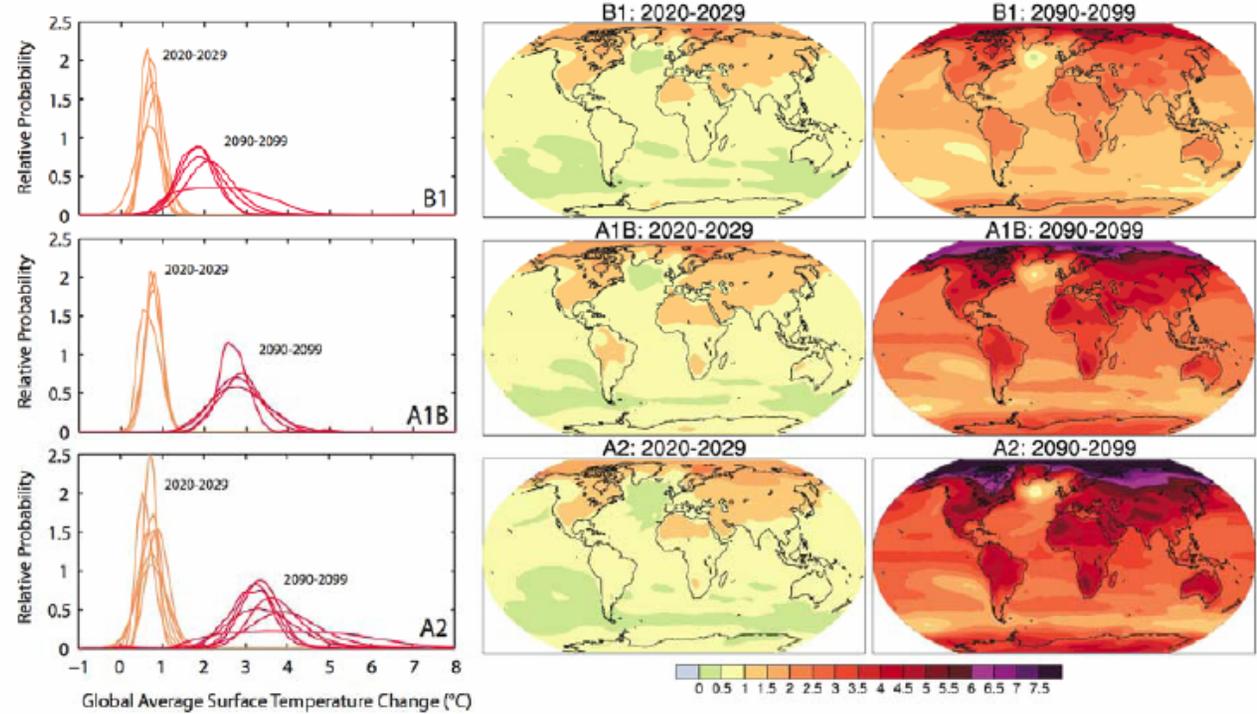
Blue
for Jan-Feb-Mar,
green
for Apr-May-Jun,
red
for Jul-Aug-Sep,
orange
for Oct-Nov-Dec.

TC frequency as a function of peak wind intensity

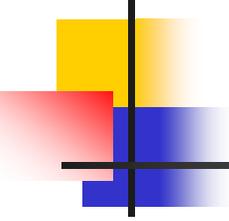




AOGCM Projections of Surface Temperatures



©IPCC 2007: WG1-AR4



Summary

- Recently, extreme events are increasing.
- Amount of loss is increasing!
- It is certain that probability of extreme events will increase in future!
- Development of a climate model will contribute to our adaptation for future climate change.