CITES 2019
Report of Sevastopol group

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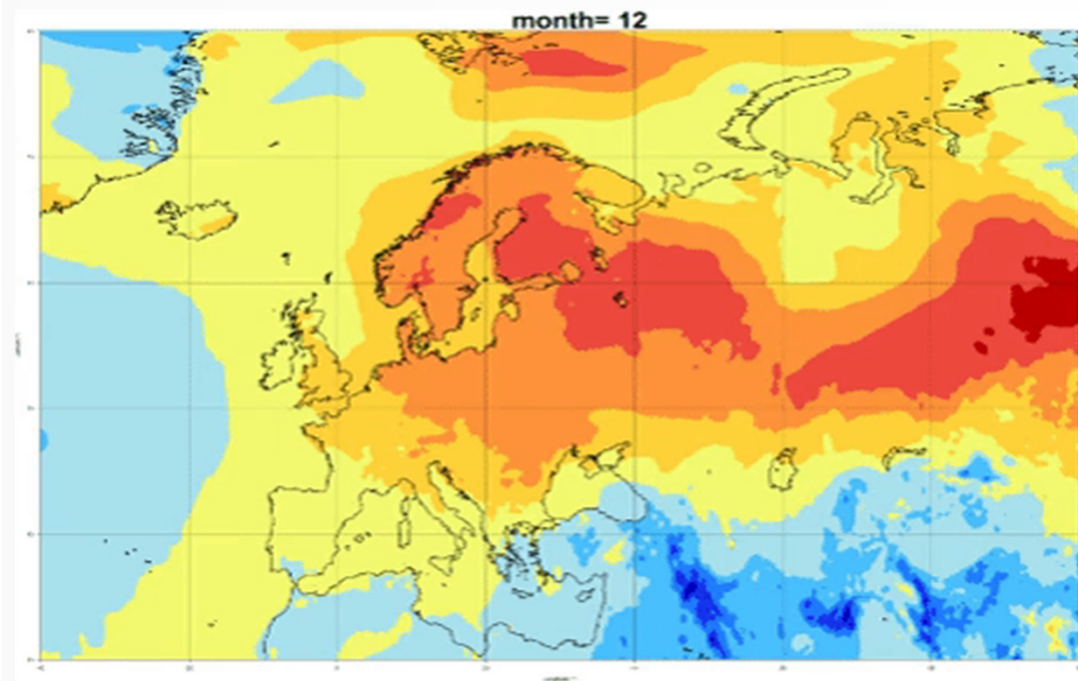
[1] – Marine Hydrophysical Institute of RAS
[2] – Institute of Natural and Technical Systems
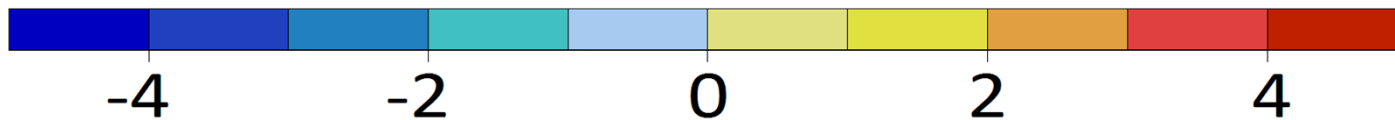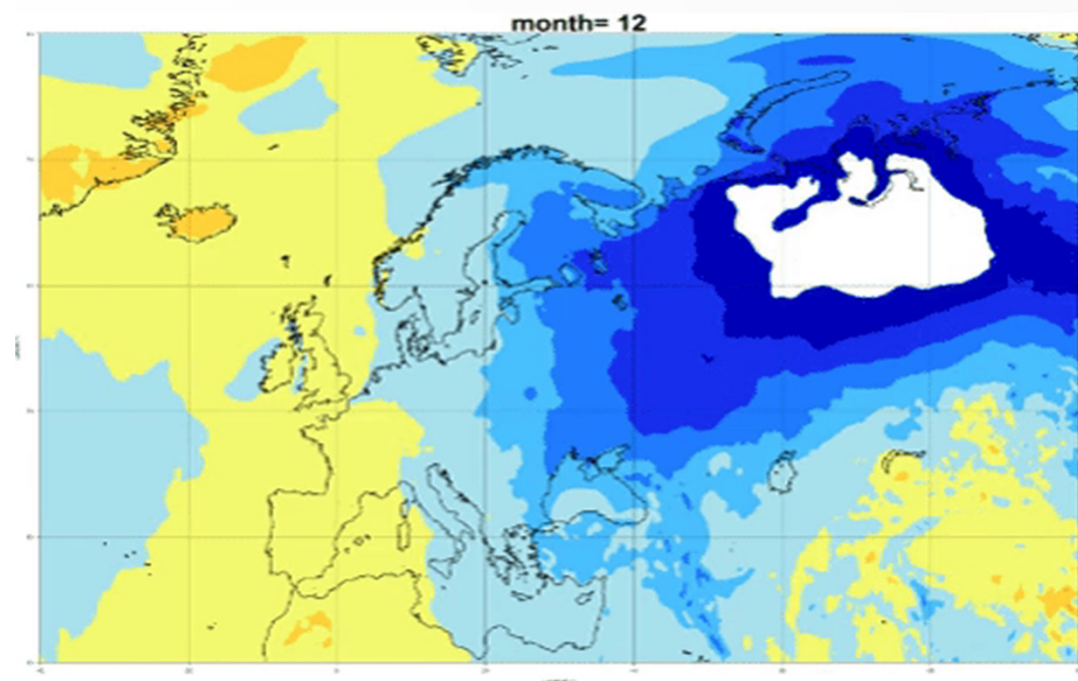**Sevastopol, Russia**

- **Work with ESMWF, ERA5**

- **Comparison of different forecasts (ERA5, CHFP)**

- Ensemble analysis

- Date base IRI

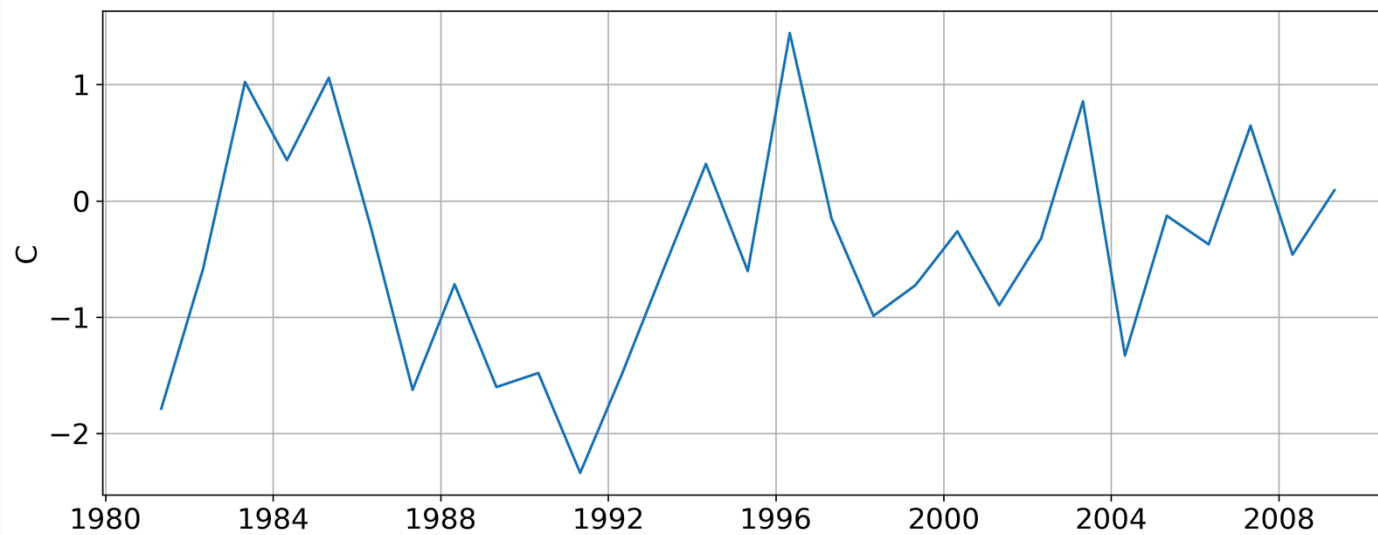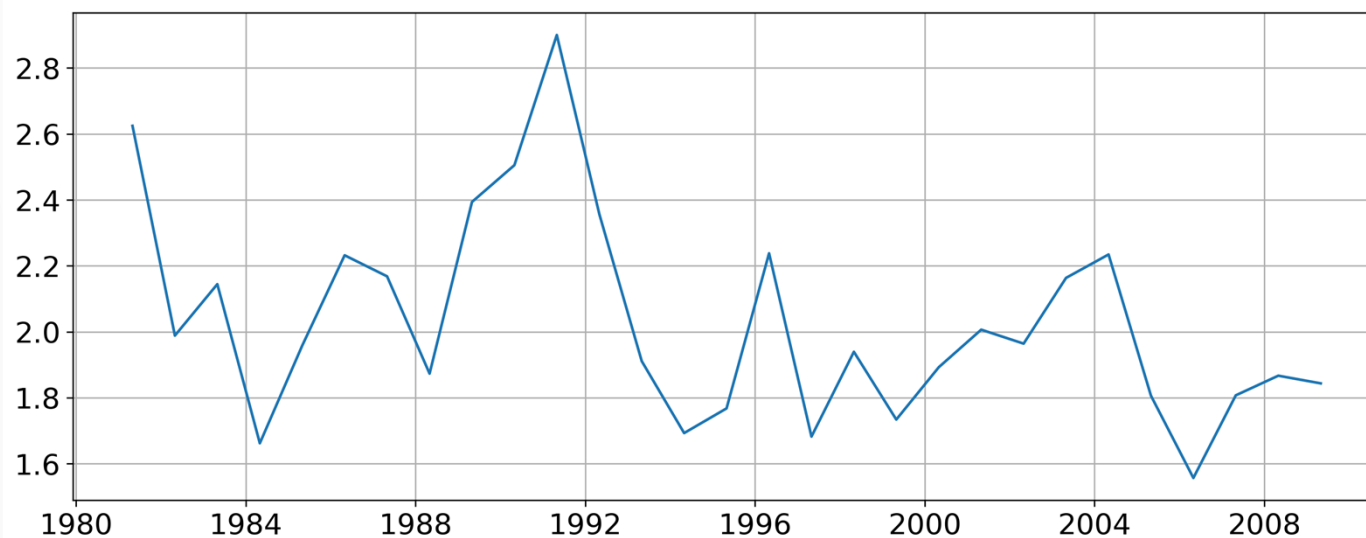Temperature response to El-Nino events in Atlantic-Europe
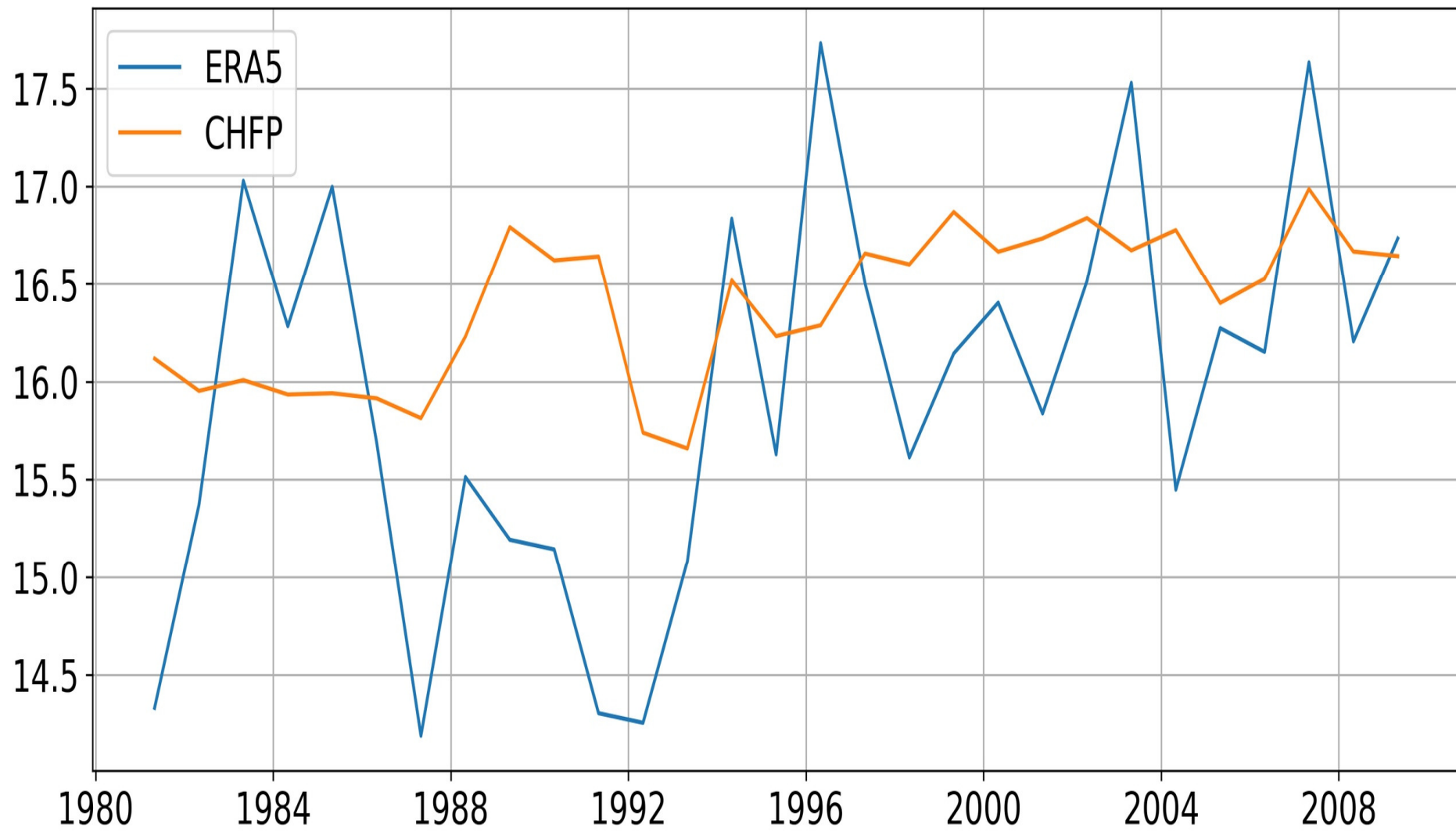

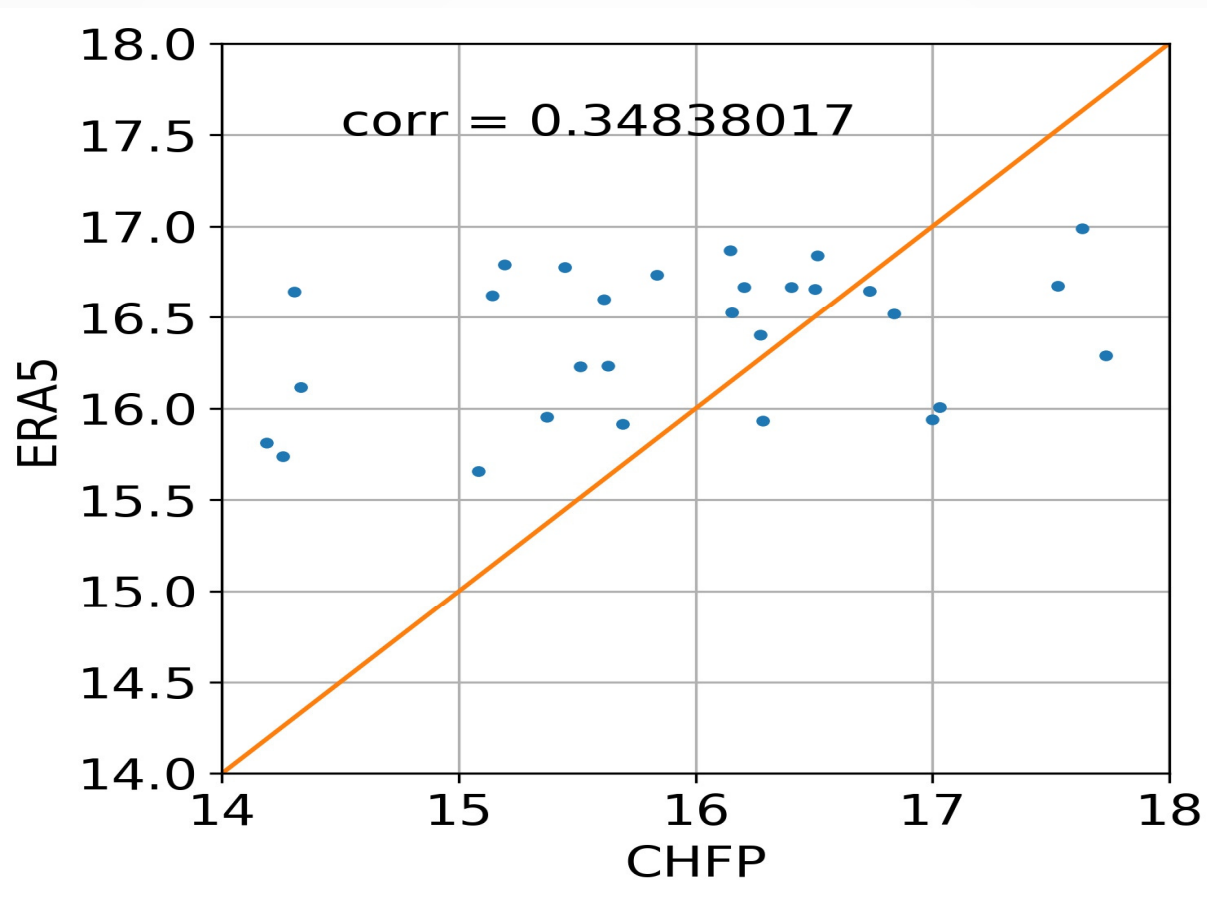Eastern El-Nino

Central El-Nino

Work with ESMWF, ERA5 and CHFP

Differense ERA5, CHFP

Comparison of different forecasts (ERA5, CHFP)

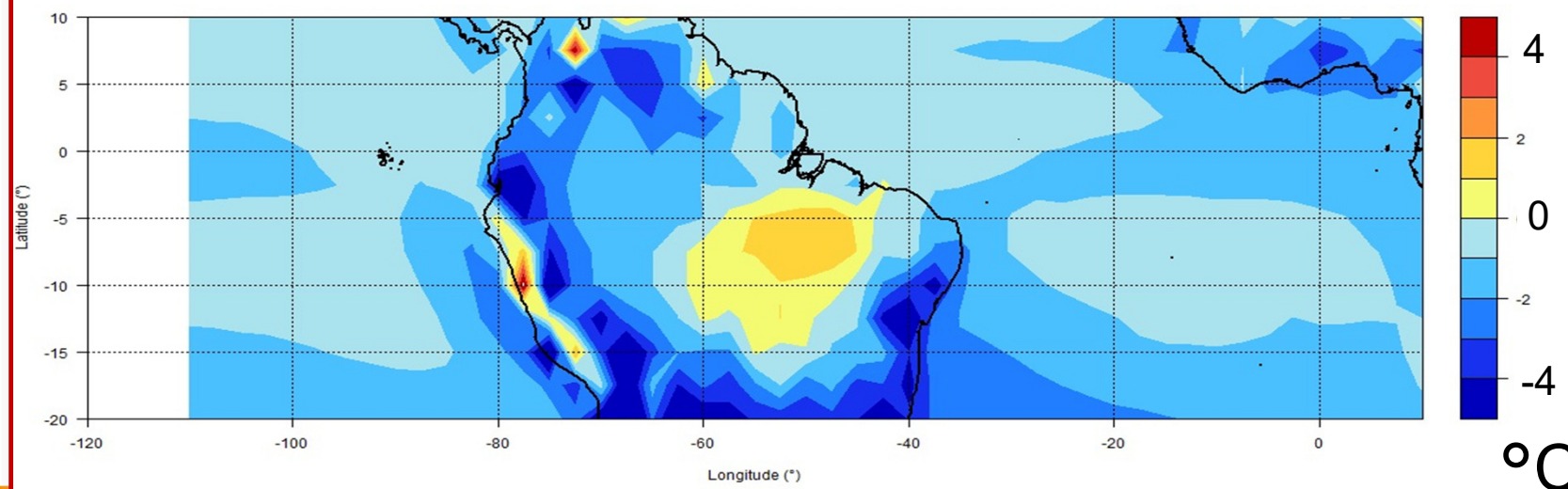Comparison of different forecasts (ERA5, CHFP)

corr = 0.34838017

Model error (mean(CHFP) – ERA-5)

- **Comparison of different forecasts**

  (ERA5, CHFP)
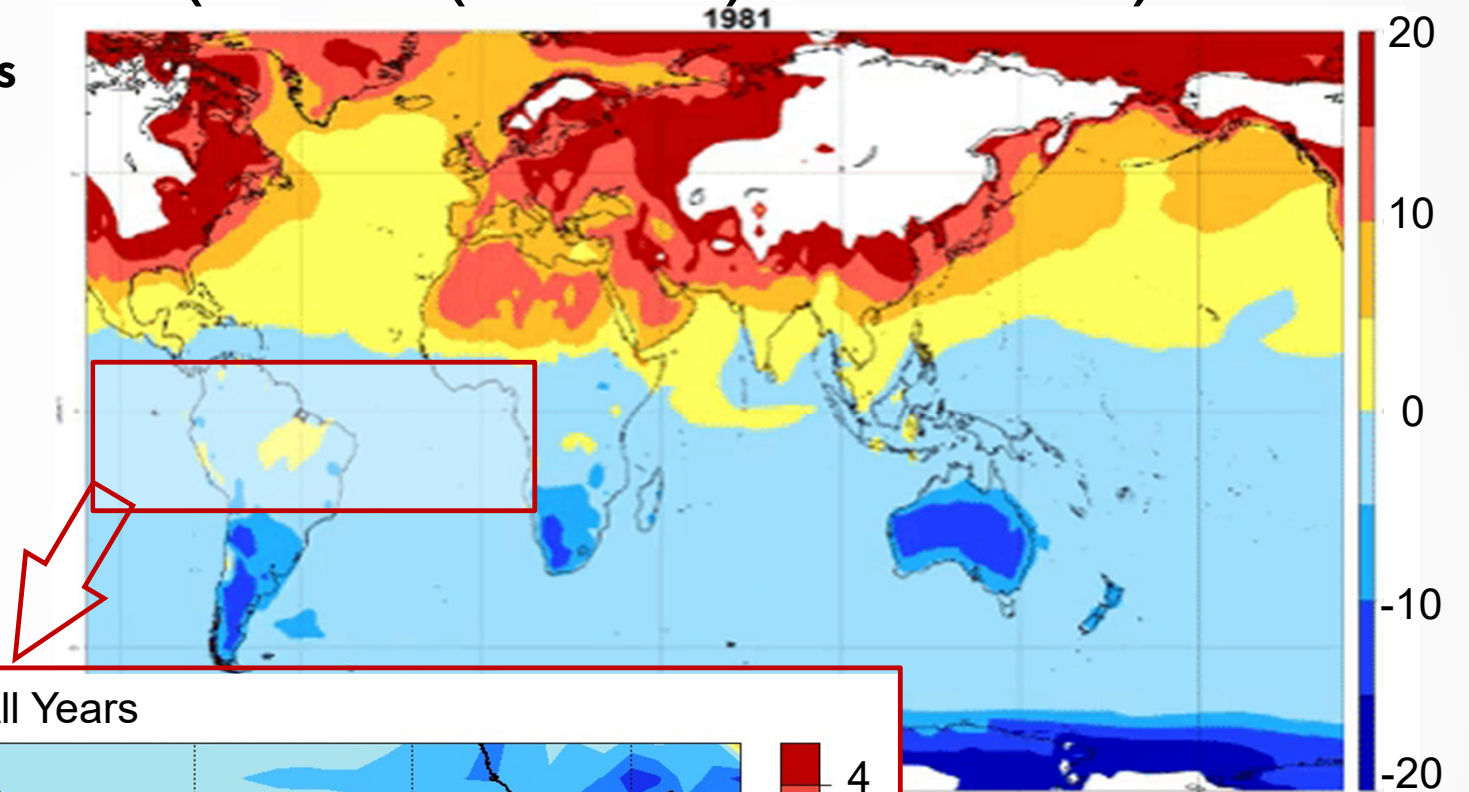
Ensemble analysis

**Using Decadal forecasting
Bias correction**

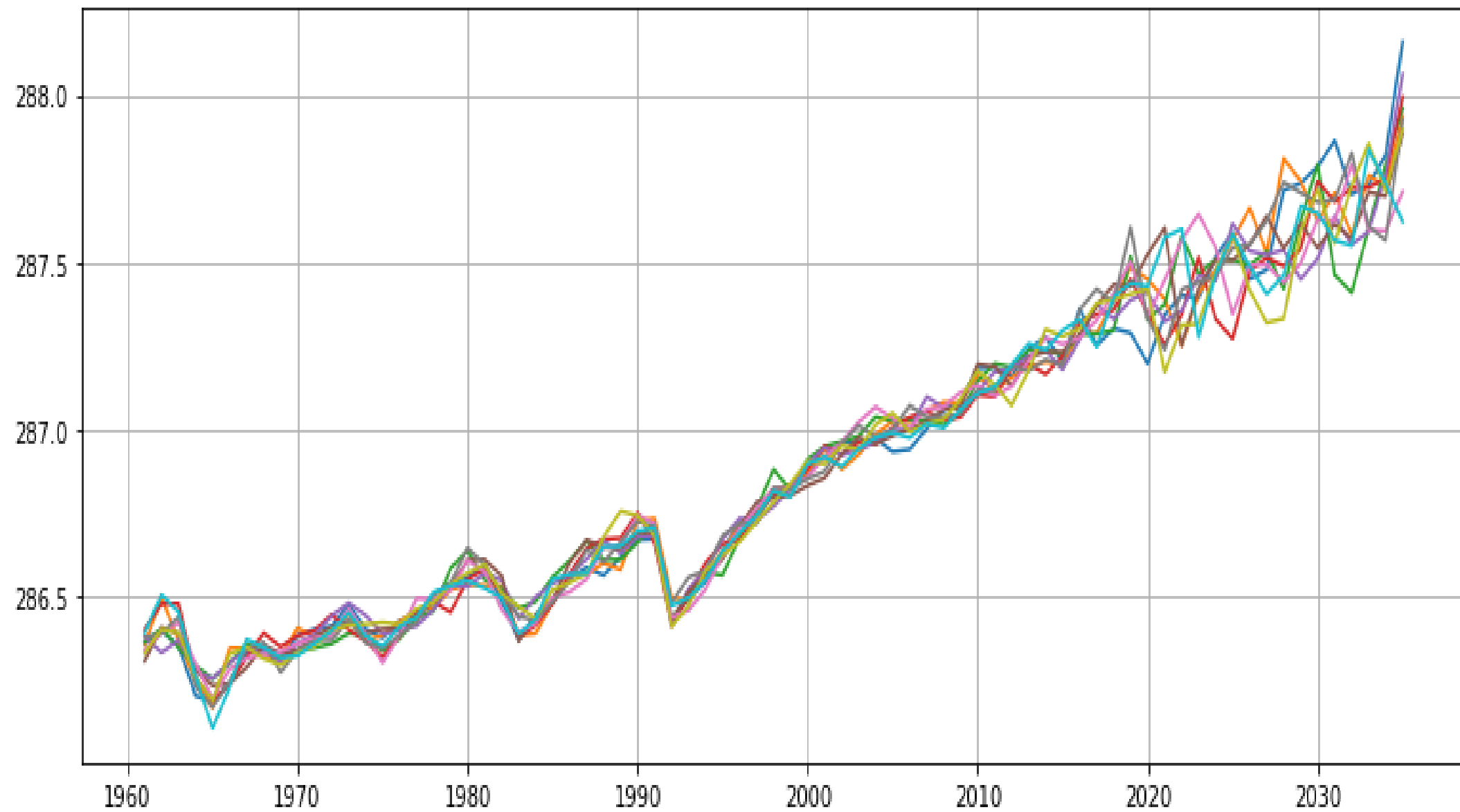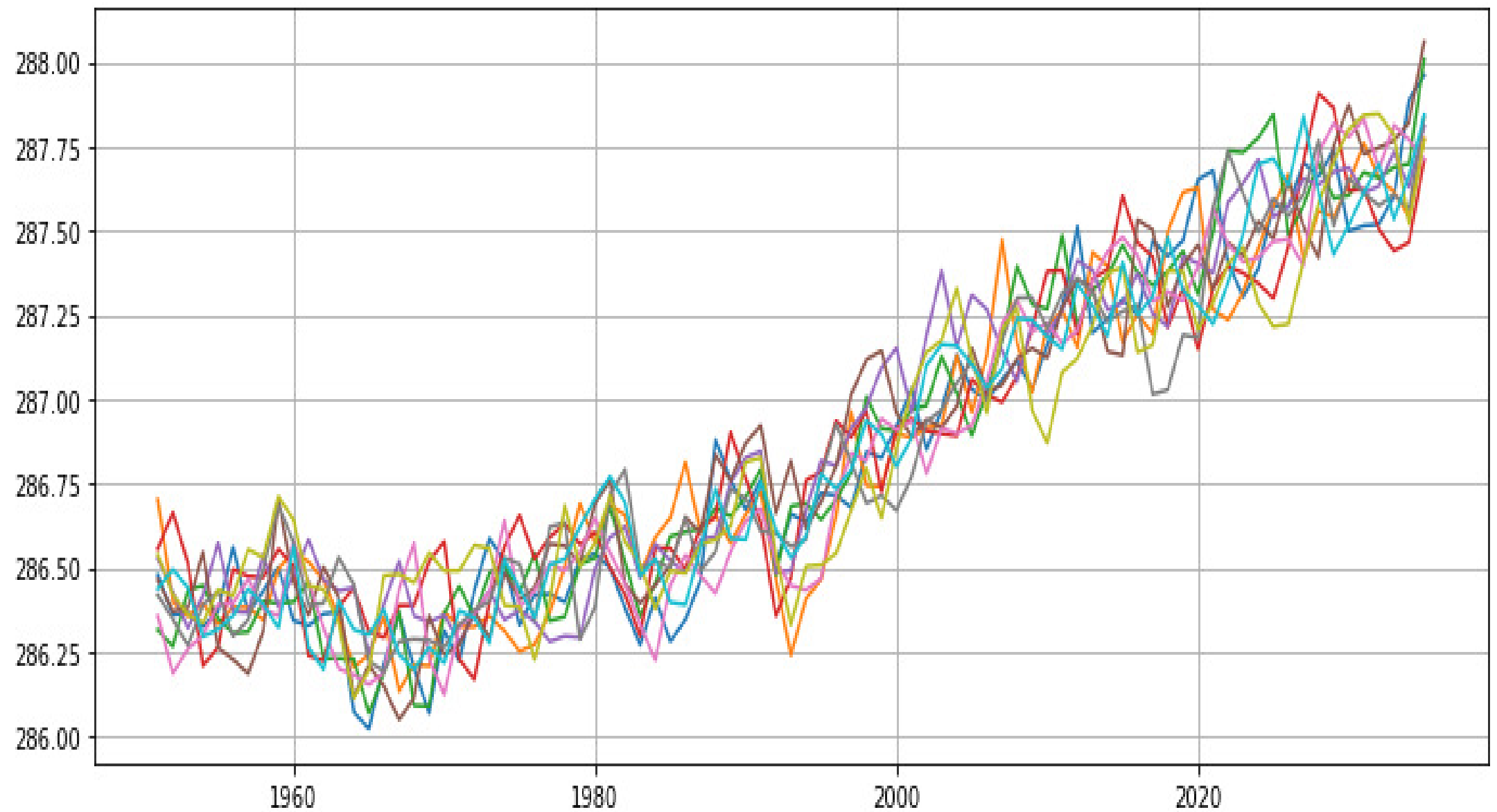**Full field global temperature**

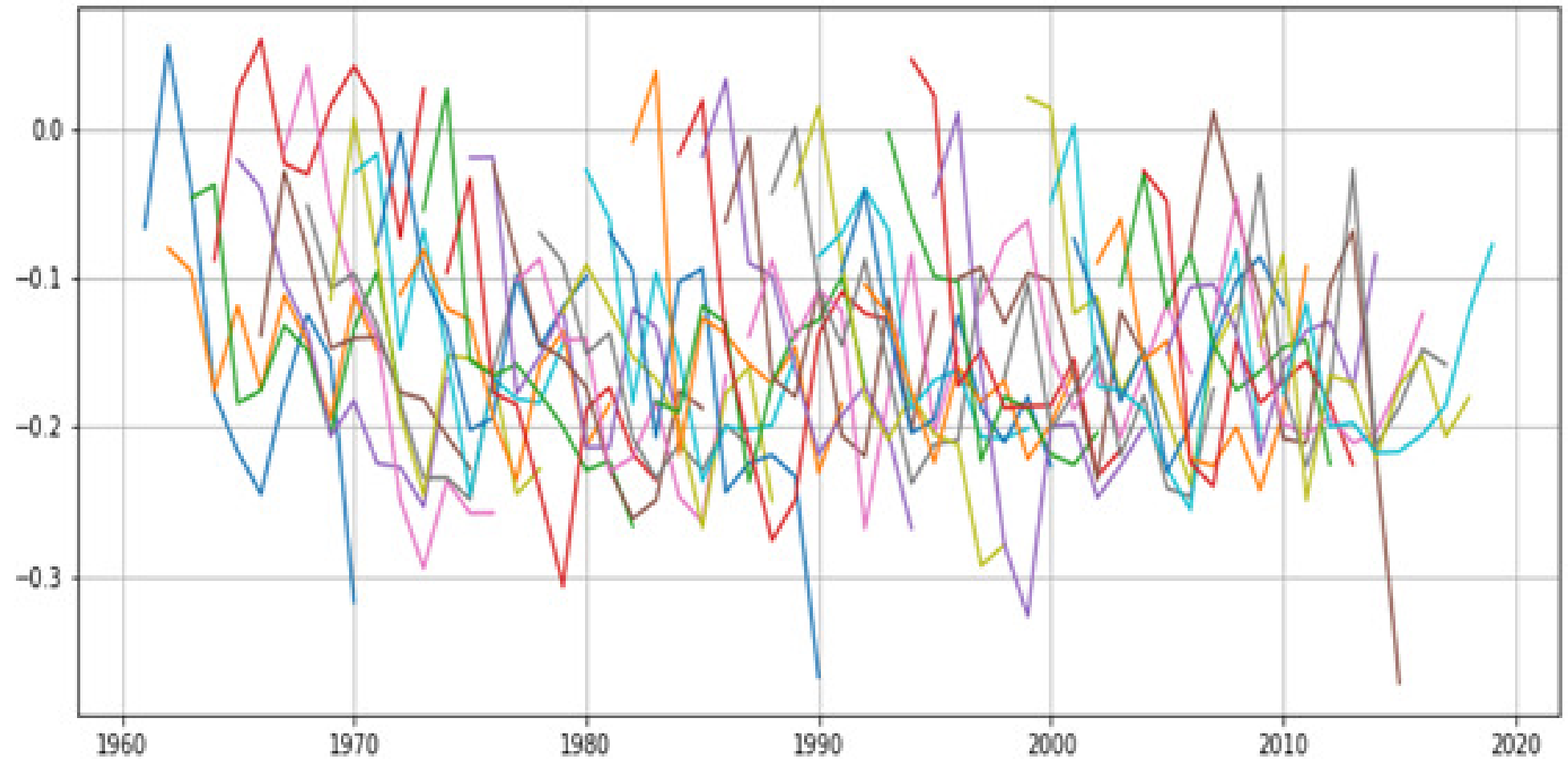Temperature, averaged over the ensemble
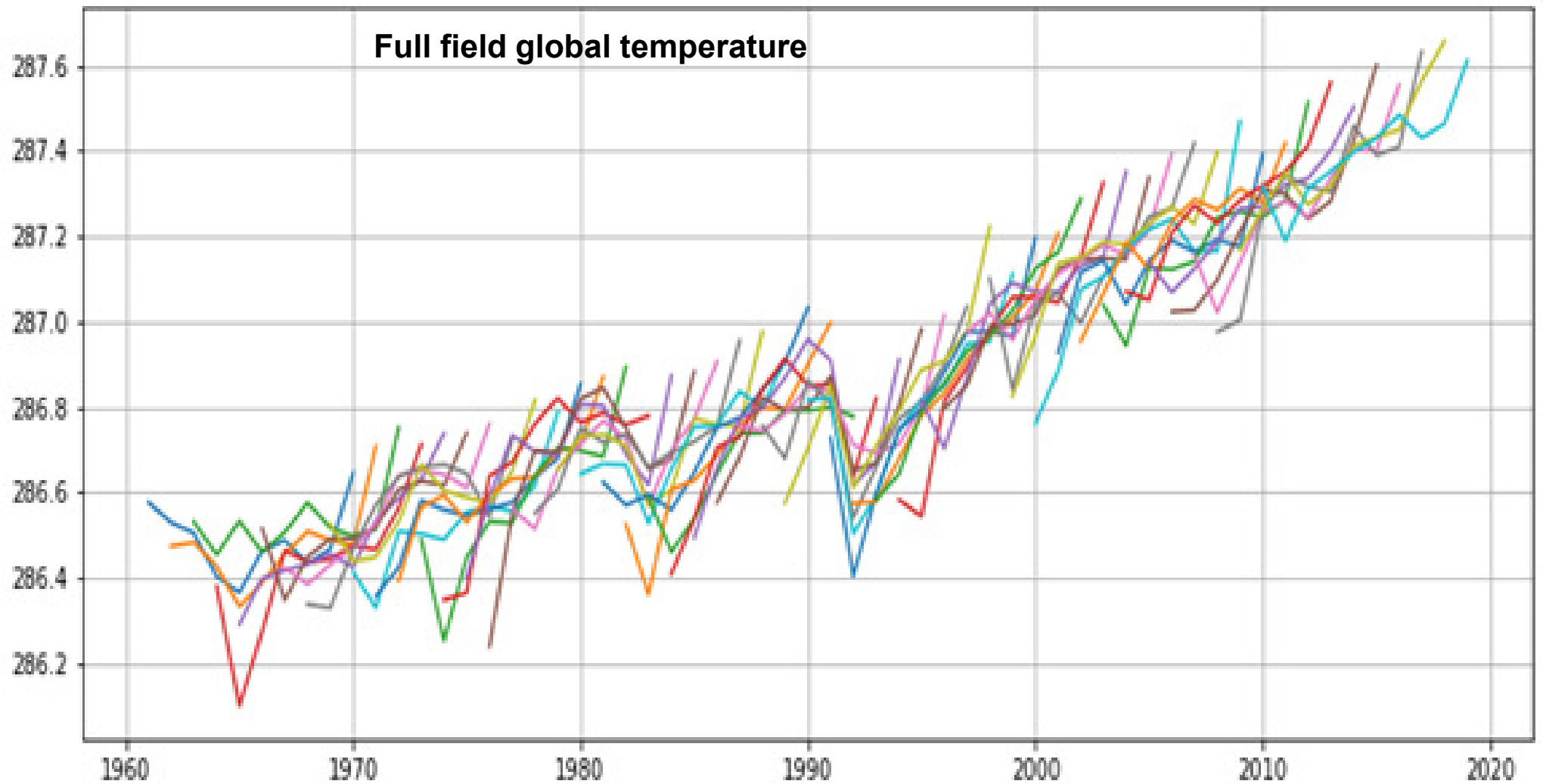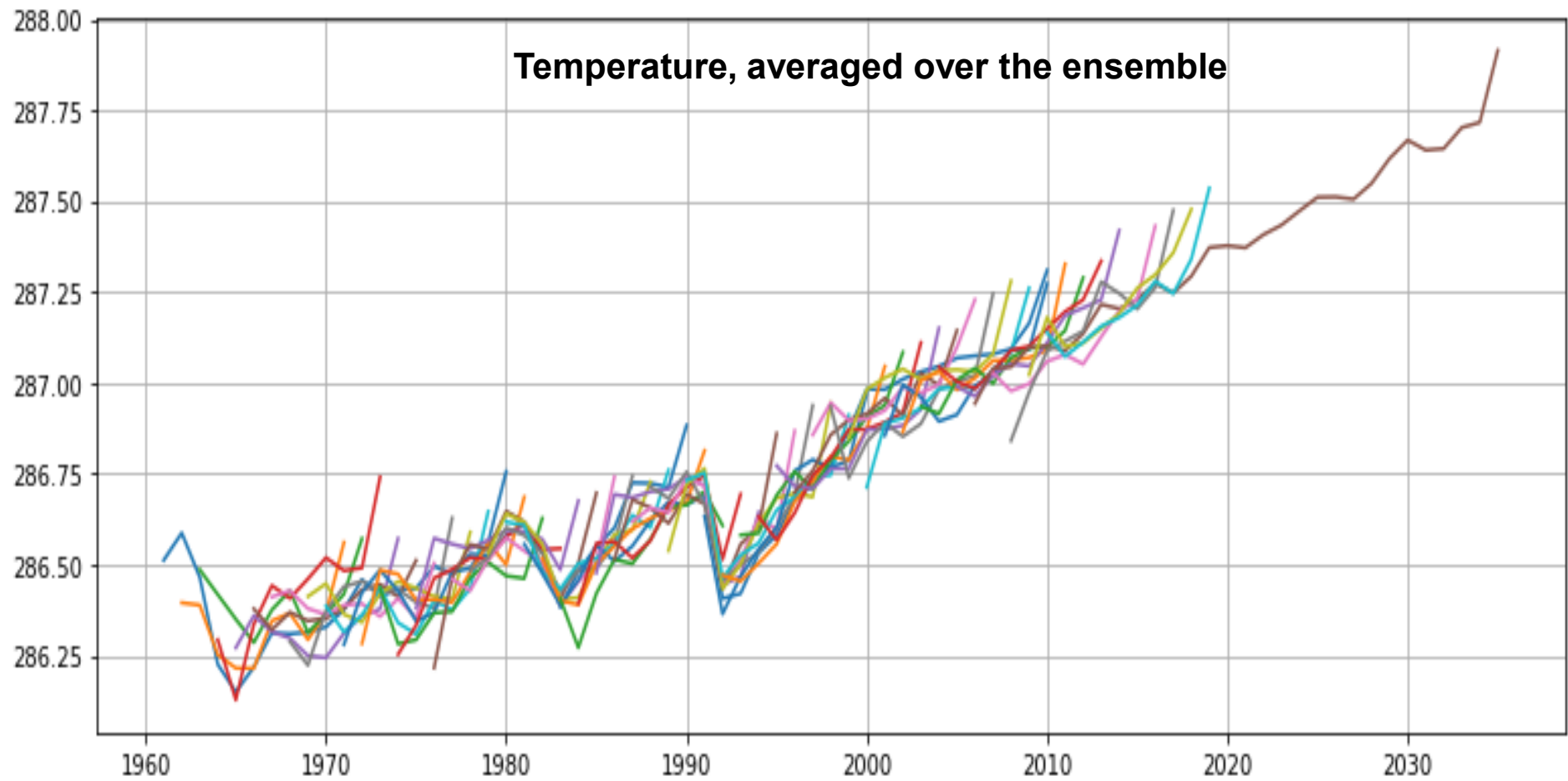
Increase in temperature

Mean anomalies ensembles, averaged on years
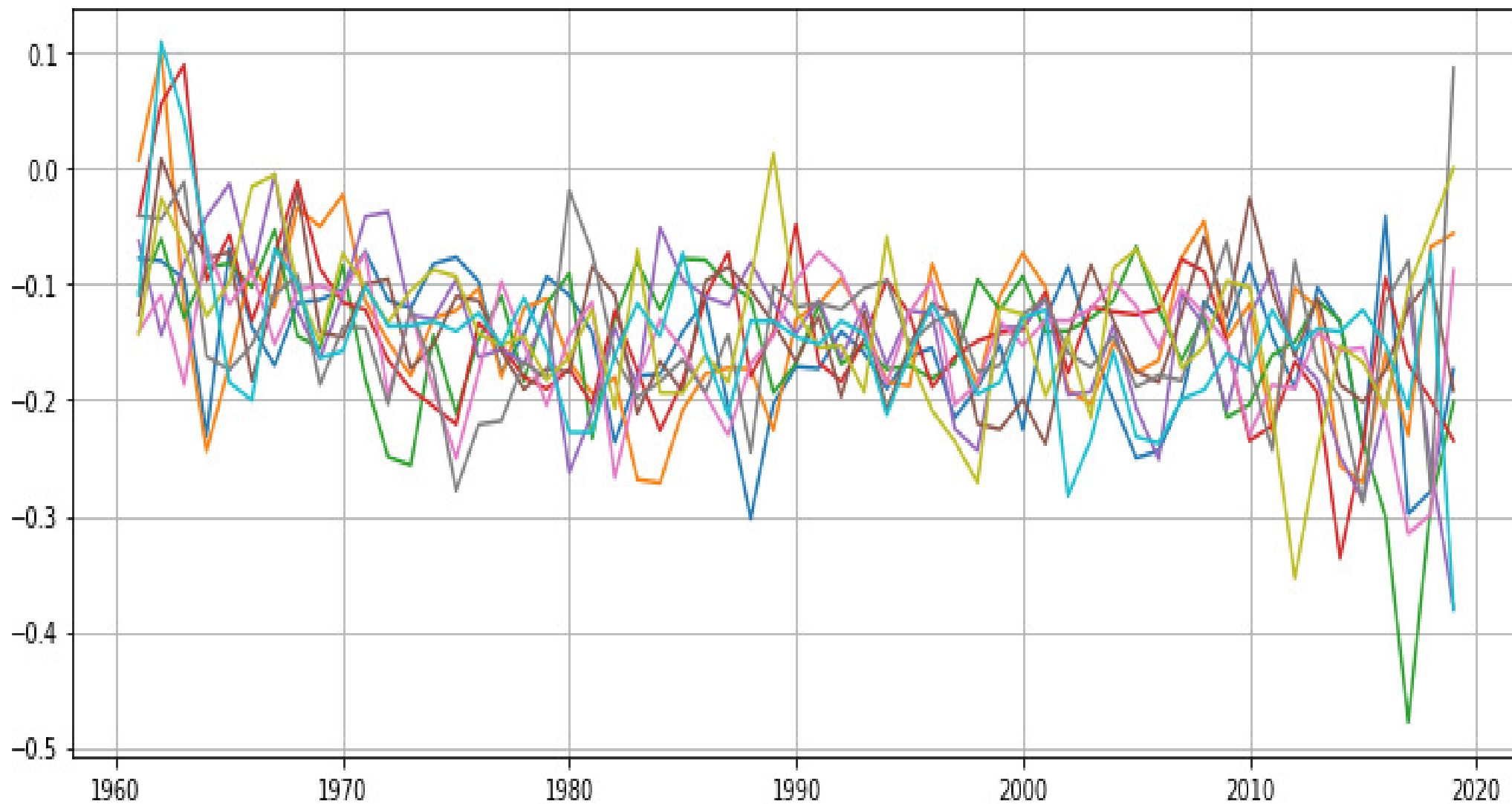
Data, averaged on years

differences between anomalies and full fields, averaged on ensemble

Differences between full fields and anomalies, averaged on years

anomaly mean [ECMWF S2S ECMF reforecast perturbed sfc_precip tp] / water_density 17.5 days 0000 21 Jun 2018

Описание   Экспертный режим   опции   Инструкции

```
SOURCES .ECMWF .S2S .ECMF .forecast
.control
  SOURCES .ECMWF .S2S .ECMF .forecast
.perturbed .sfc_precip .tp
    X -40 60 RANGE
    Y 30 80 RANGE
    S (0000 25 Jun 2018) VALUE
    L (25) (28) VALUES
    [L] differences
    [M] average
   DATA 0 25 RANGE
   X Y fig- colors coasts -fig
      SOURCES .ECMWF .S2S .ECMF .reforecast
.perturbed .sfc_precip .tp
      X -40 60 RANGE
      Y 30 80 RANGE
      S (0000 21 Jun 2018) VALUE
      L (14) (21) VALUES
      [L]differences
      hdate (1998) (2017) RANGE
      [M]average
      dup
       [hdate]average
       sub
     c:
      /name /water_density def
      998 (kg/m^3) :c
      div
    /mm unitconvert
    correlationcolorscale
    DATA -20 20 RANGE
    X Y fig- colors coasts -fig
```

OK   reset

hdate   1998 ⬅ 2017 ➡ 2017

L 17.5 days forecast start time 0000 21 Jun 2018 hdate 2017

Accumulated Total Precipitation [mm]
-20   -15   -10   -5   0   5   10   15   20