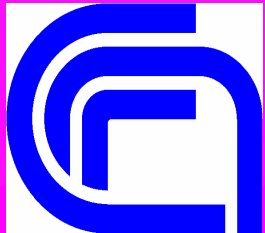




Cambiamenti Climatici e impatto sull'area Veneziana

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Emanuela Pagan, Stefano Sofia**

*Consiglio Nazionale delle Ricerche,
Istituto di Scienze dell'Atmosfera e del Clima*

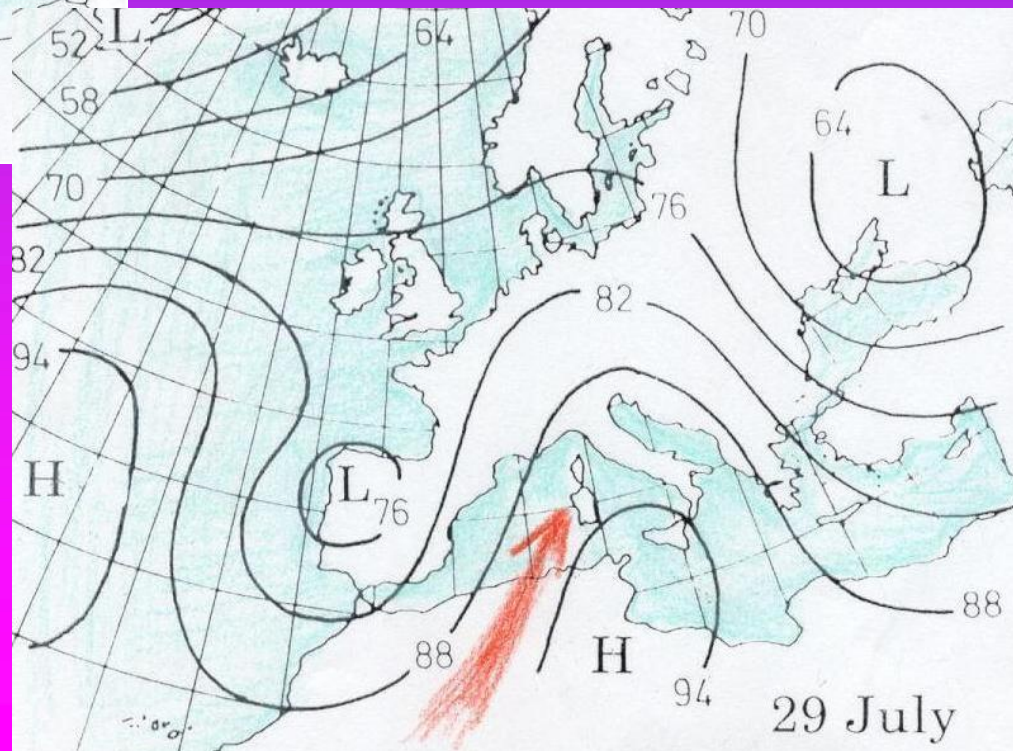


Extreme Heat Waves in Europe

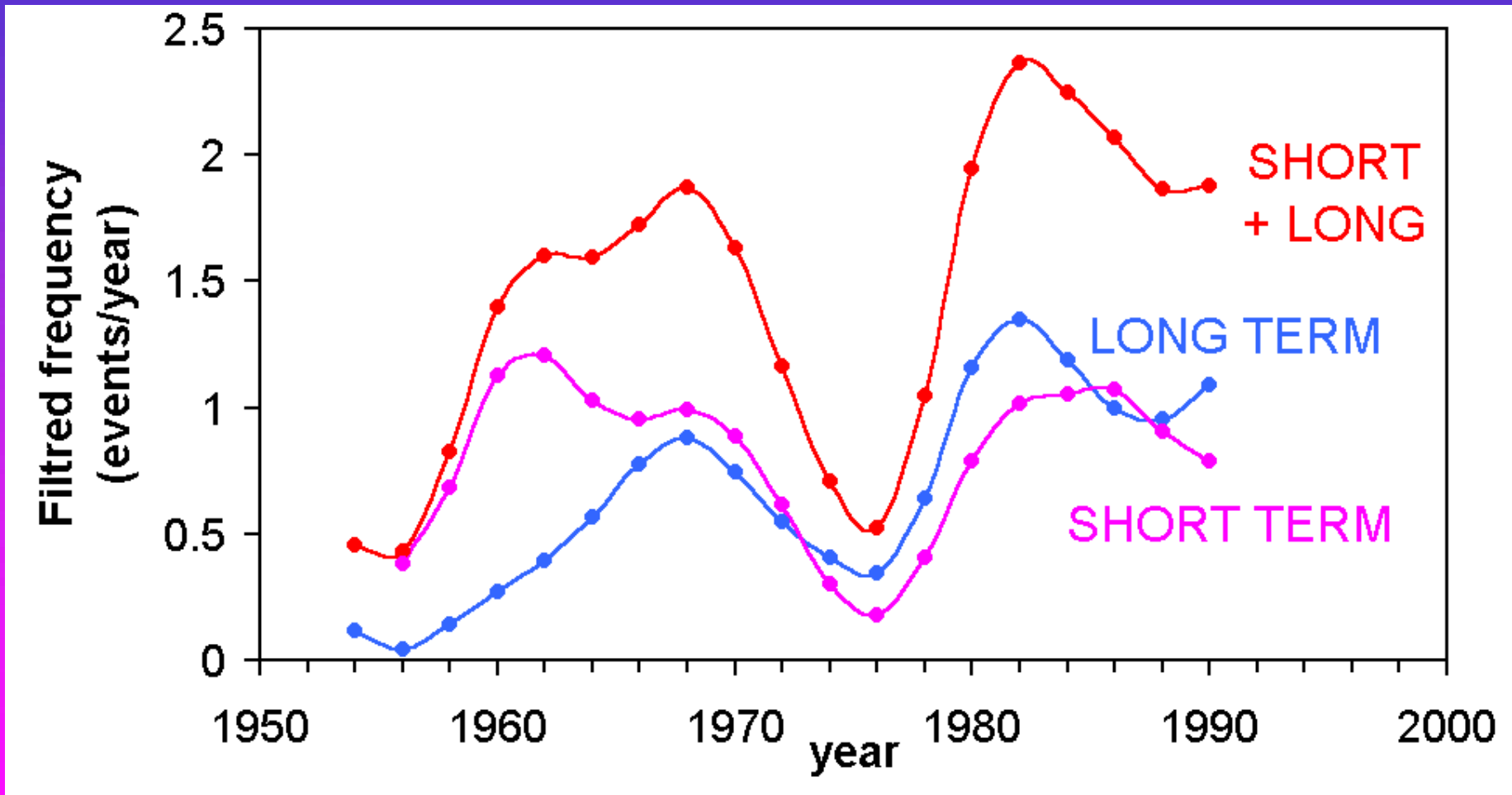


Short-lasting Heat Waves
 $7^{\circ}\text{C} \leq \Delta T \leq 15^{\circ}\text{C}$
Duration = 3 – 5 days

Long lasting Heat Waves
 $5^{\circ}\text{C} \leq \Delta T \leq 7^{\circ}\text{C}$
Duration > 10 days

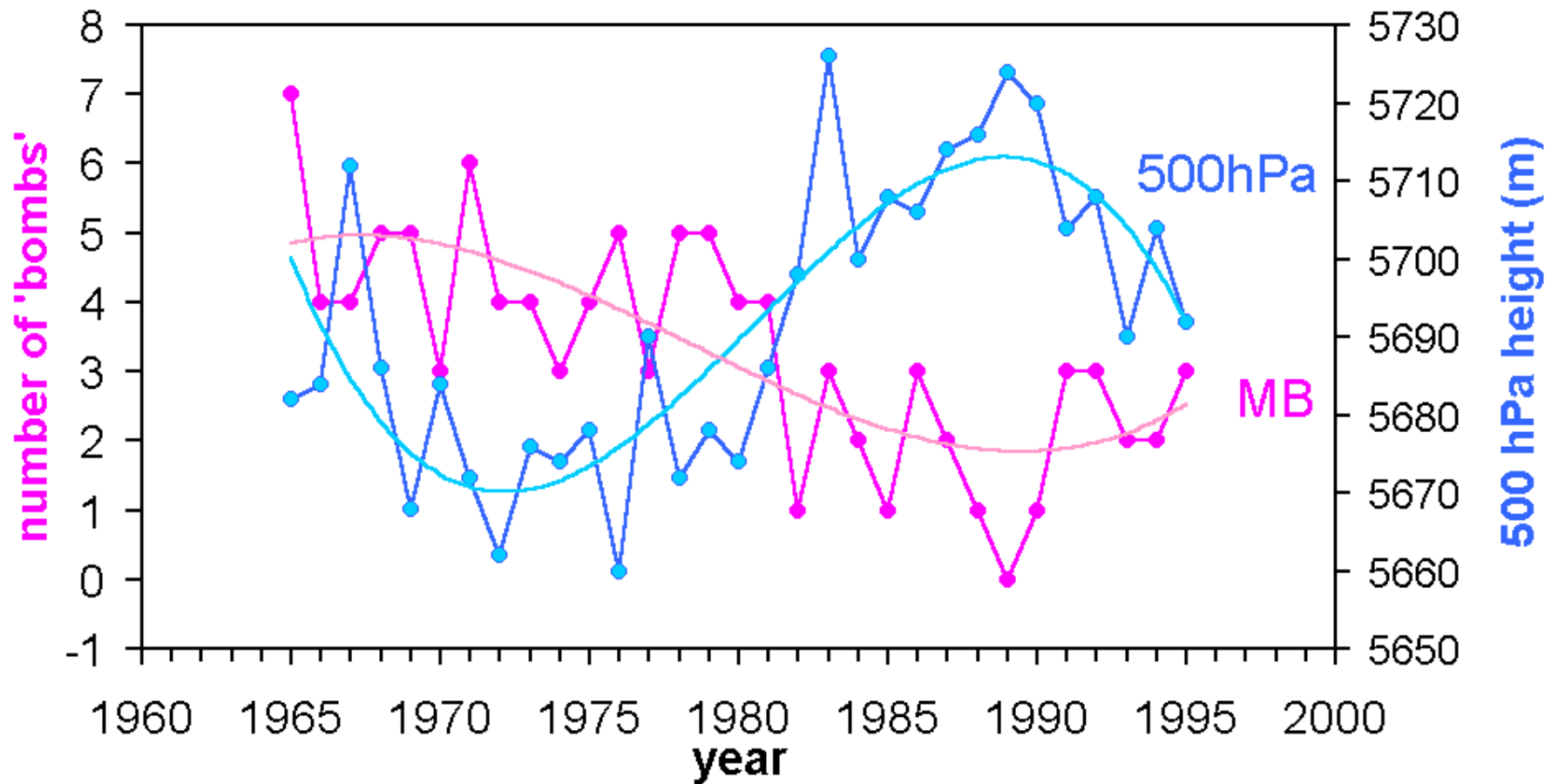


Trend of the Extreme Heat Waves in the Mediterranean



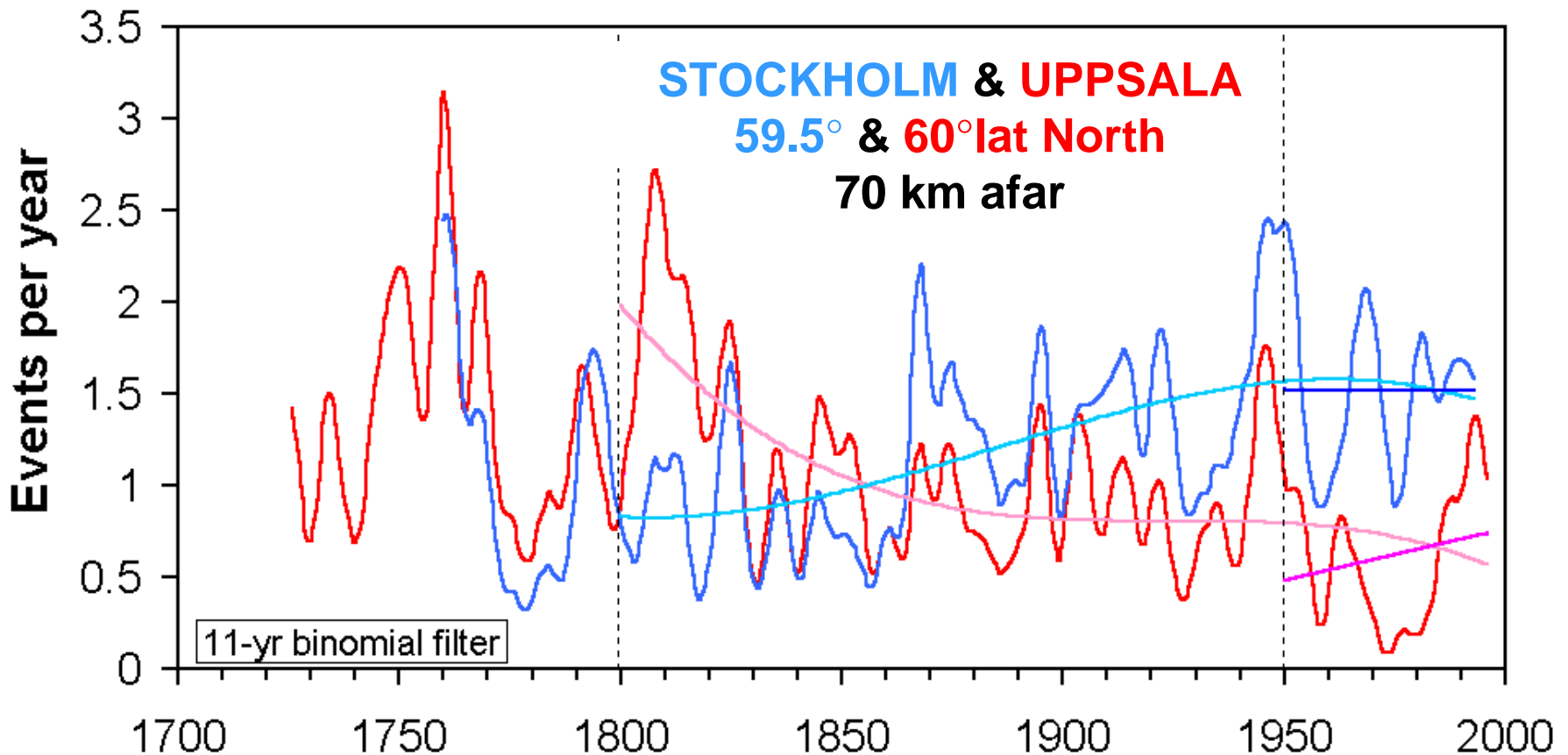
Strong Variability, difficult to forecast

Connection between the 500hPa Geopotential Height and the Meteorological Bombs over the Central-Western Mediterranean



Passages of **Extreme Low Pressures** are anti-correlated with **Average High Pressure Fields**

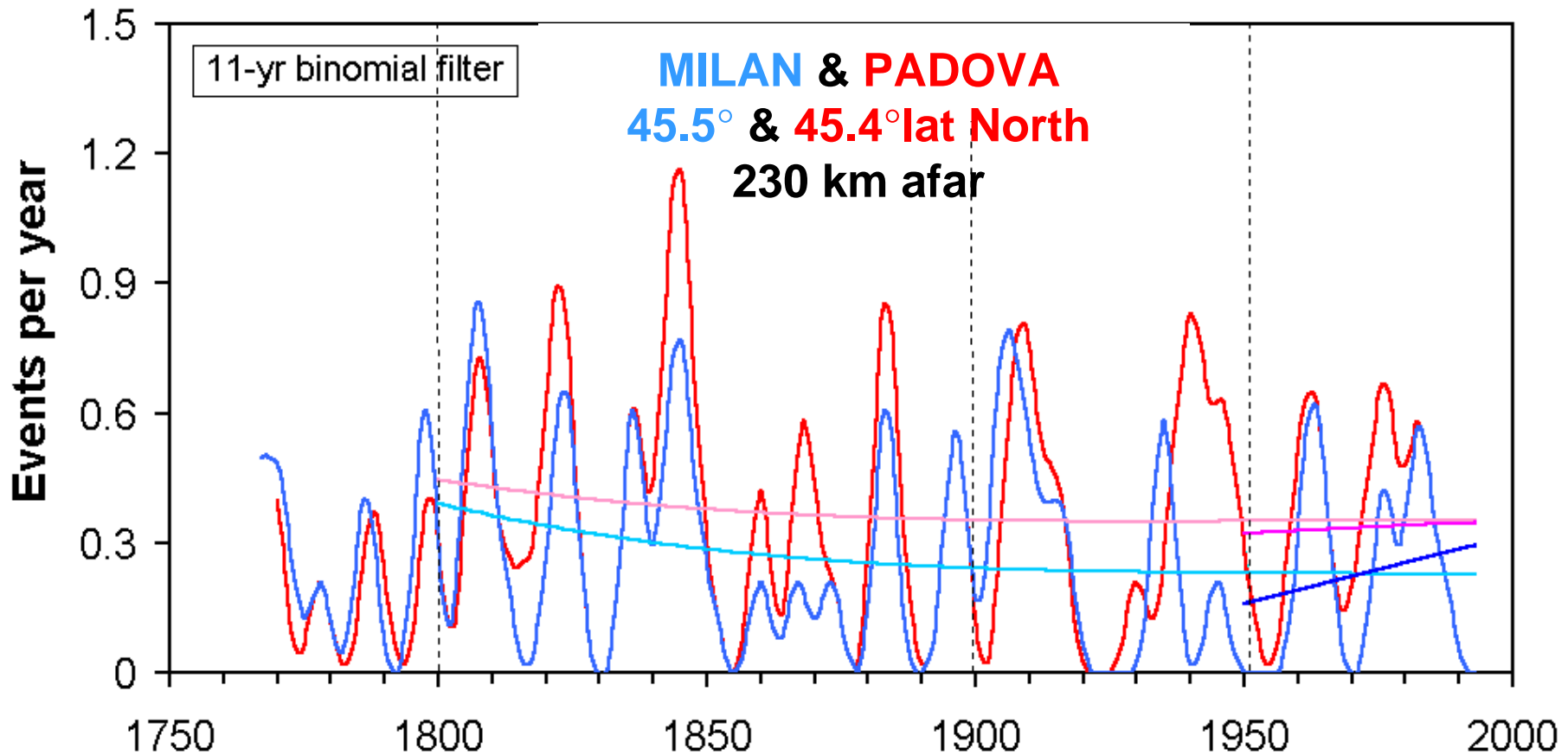
Frequency of "meteorological bombs" > 24 hPa/day



- (1) Data Quality? a better correlation is expected
- (2) The present-day tendency changes with the length of the series
- (3) The longer the series, the better the Key to interpret data

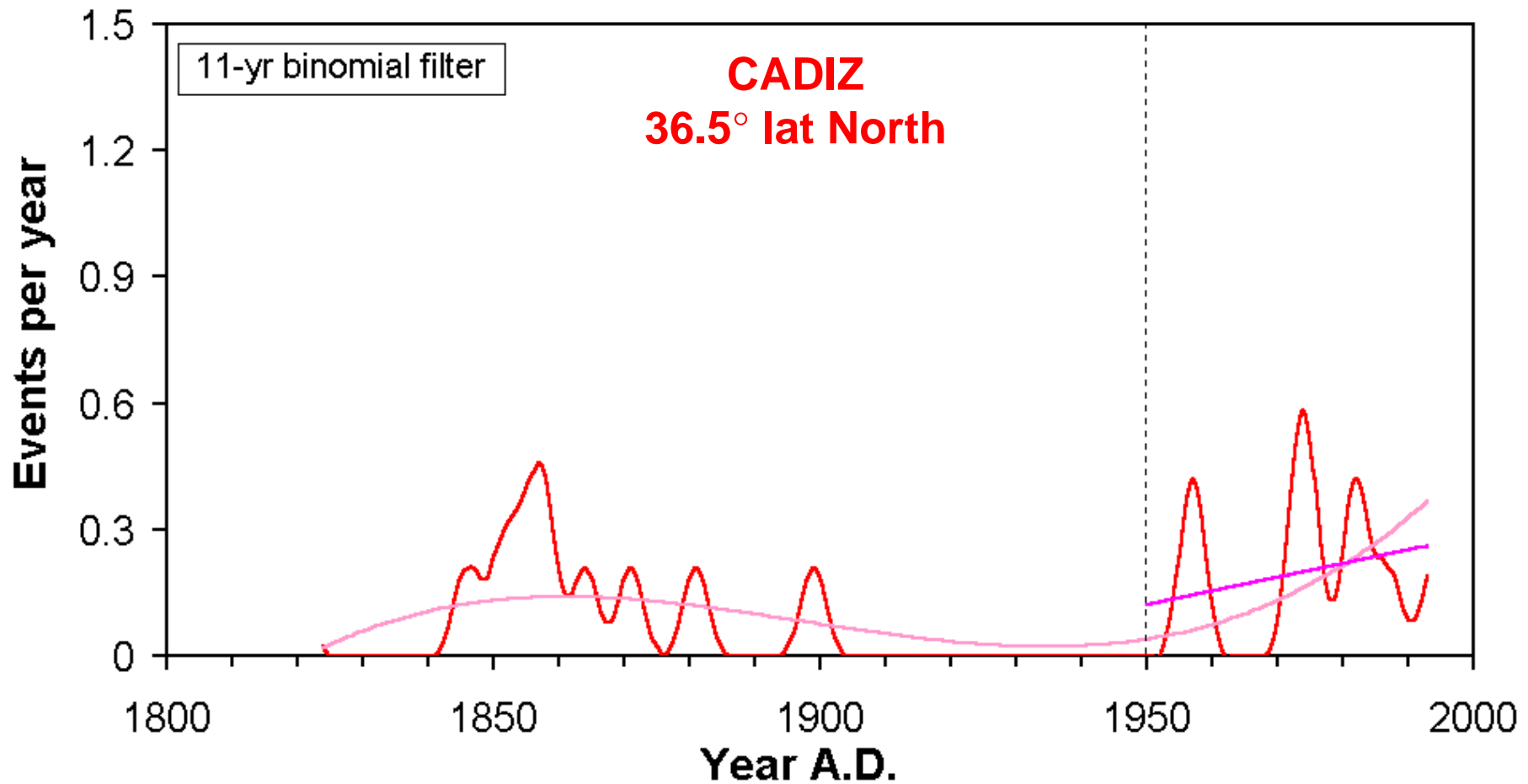
Frequency of "meteorological bombs"

> 19.8 hPa/day



Good correlation, with minor differences, i.e.
Padova: Influence of the Eastern circulation
Milan: Cyclogenesis on the lee of the Alps

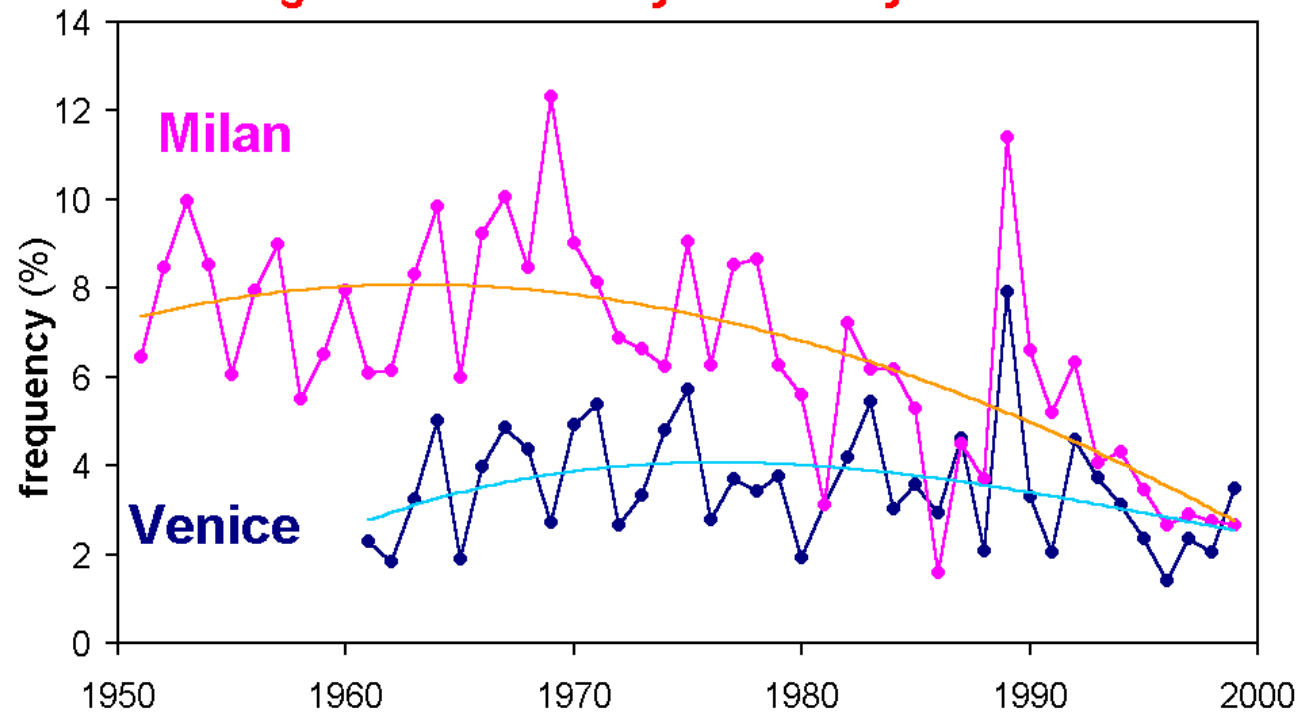
Frequency of "meteorological bombs" > 16.5 hPa/day



Rare Bombs at the Mid Latitudes



Fog in Northern Italy - Visibility < 200m



FOG/ SMOG: a strong interaction between climate and air pollution

Change of fuel, Milan

