



# A lifetime effort at Cimone to understand the black carbon climatology through observations and modelling

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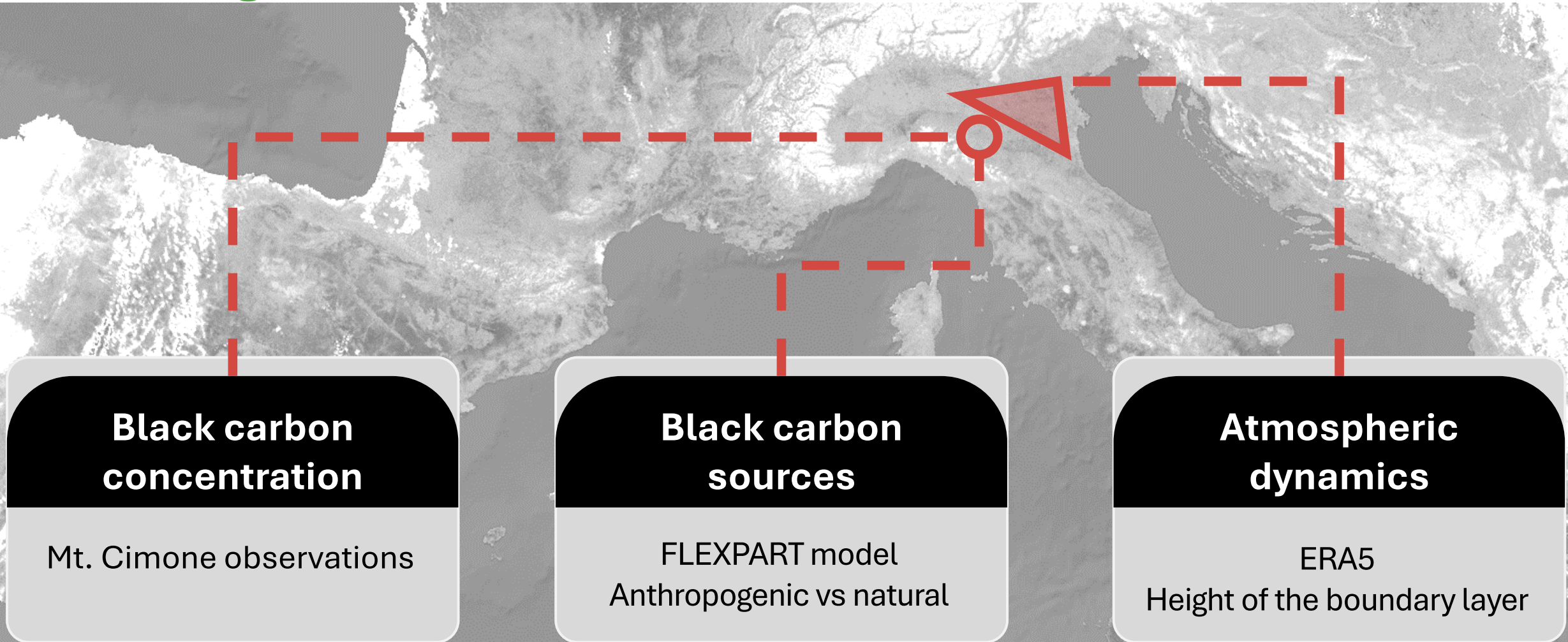
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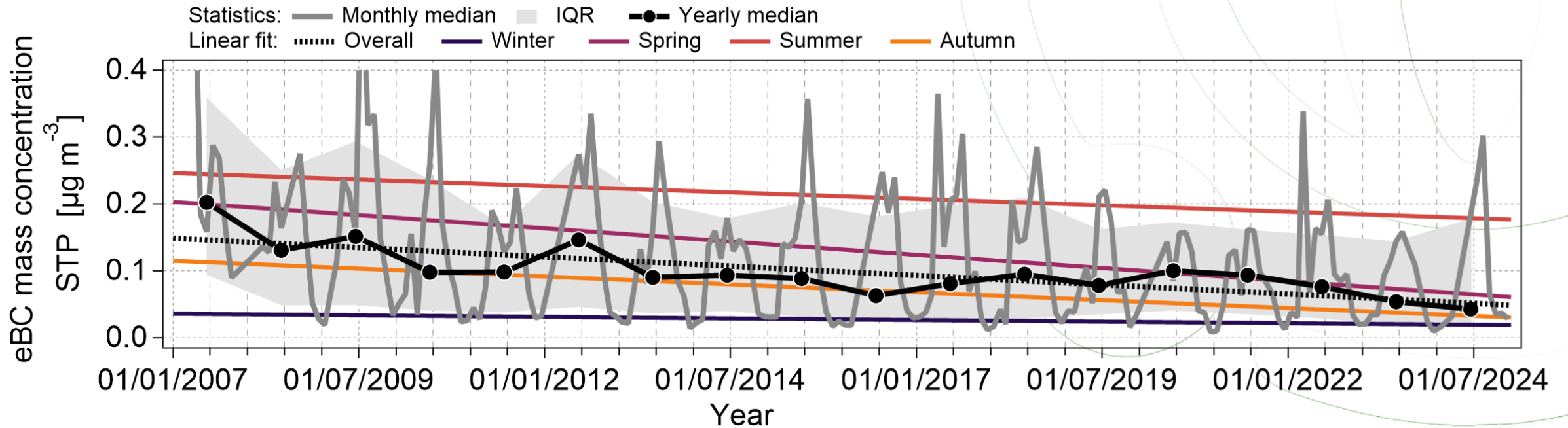
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# Merging 20 years of observations with modelling



# BC decreasing trend from observations



**Winter**

**-9.5**  $\frac{\text{ng m}^{-3}}{\text{dec}}$

**Spring**

**-80**  $\frac{\text{ng m}^{-3}}{\text{dec}}$

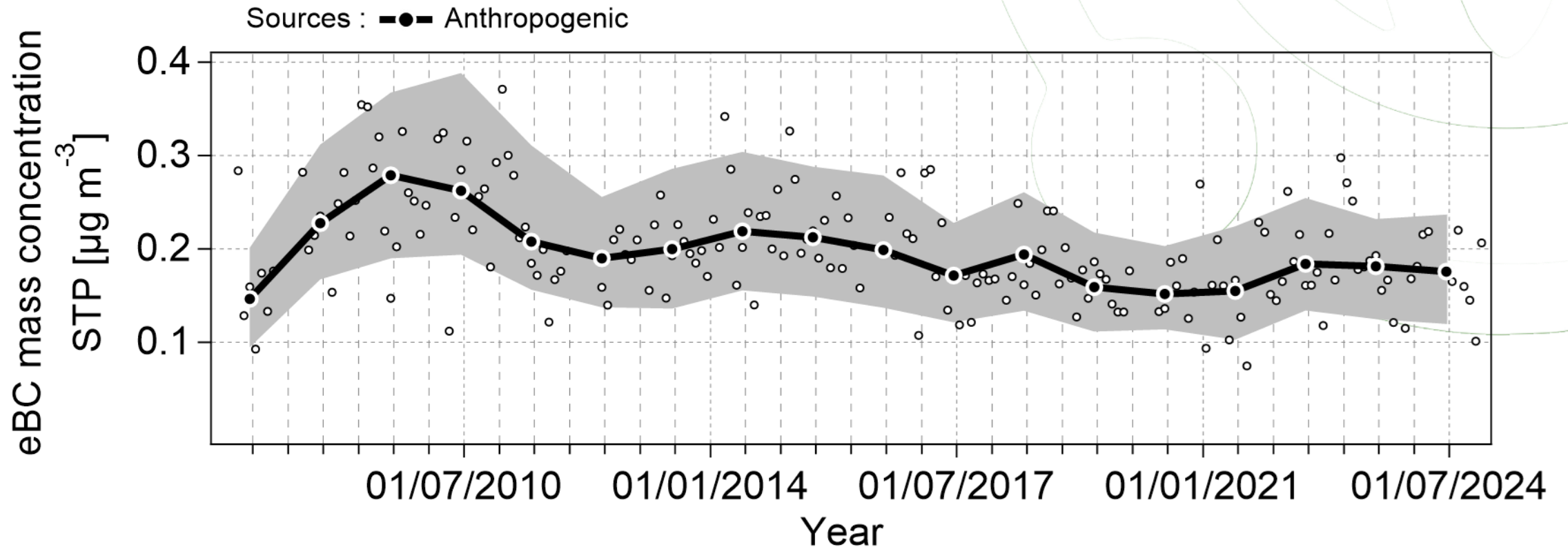
**Summer**

**-40**  $\frac{\text{ng m}^{-3}}{\text{dec}}$

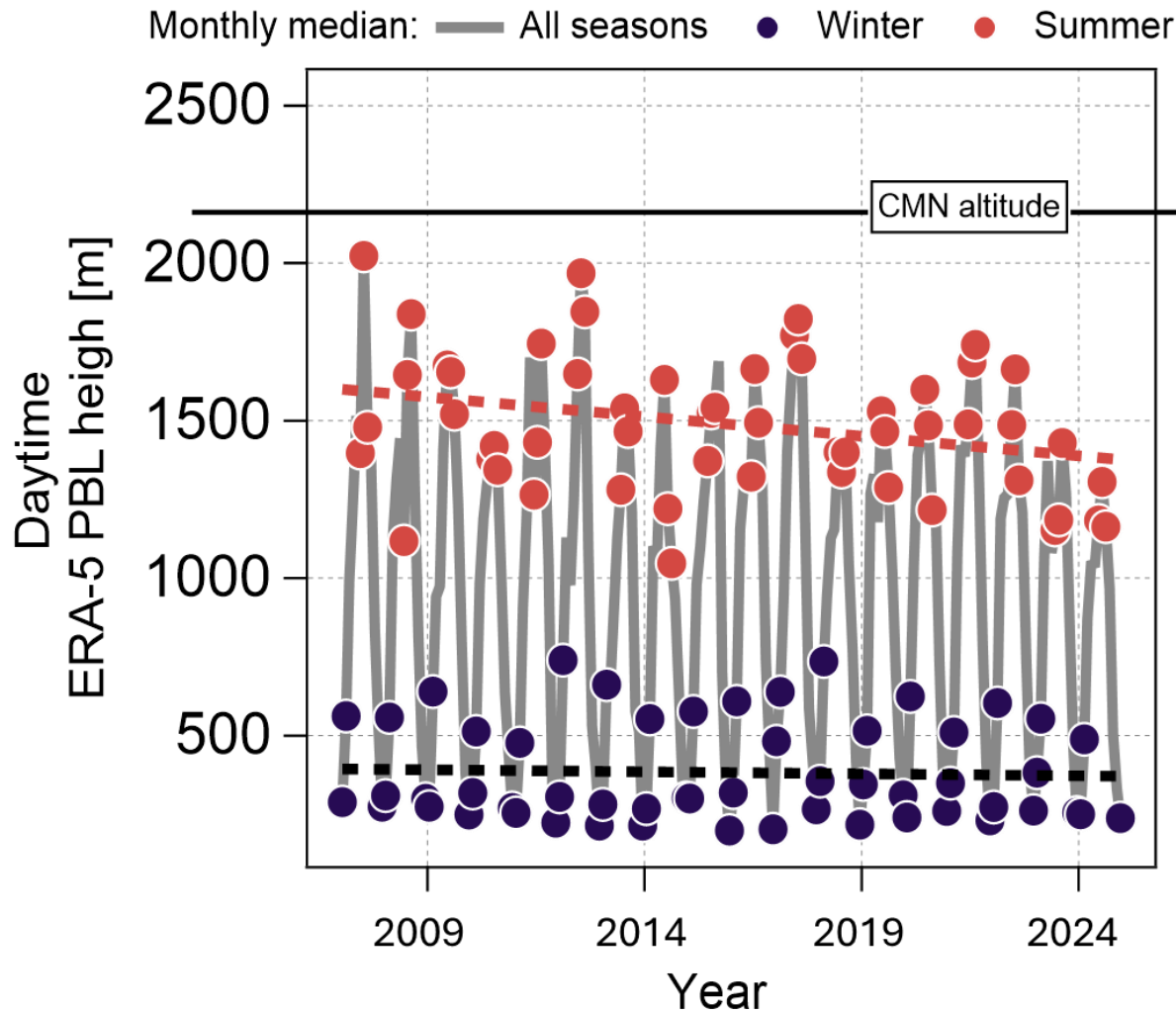
**Autumn**

**-50**  $\frac{\text{ng m}^{-3}}{\text{dec}}$

# Anthropogenic decreasing trend from FLEXPART



# FLEXPART sensitivity to atmospheric dynamics



**FLEXPART overestimation  
compared to observations**

**+11 %**

**Summer**

**+865 %**

**Winter**





# THANKS!

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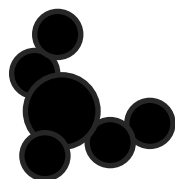


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# Black carbon aerosol (BC) in a nutshell

## BC properties



## BC sources

Human

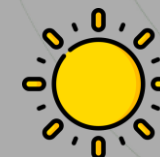


Natural



## BC properties

Light absorber



Short-lived



## Revision of BC effective radiative forcing (aerosol radiation interaction)

