

A Talk About Air Quality

Is air pollution bad?

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Presentation Outline

1 Introduction

2 Methods

3 Results

4 Conclusions

What is Air Pollution?

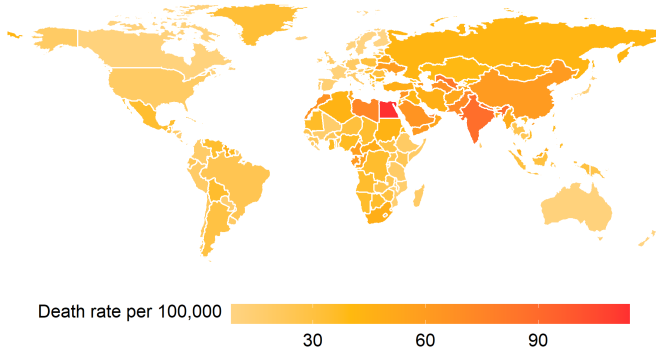
Air pollution is defined as an *"atmospheric condition in which substances are present at concentrations higher than their normal ambient levels to produce measurable adverse effects on humans, animals, vegetation, or materials."*

There are many different air pollutants:

- Nitrogen oxides ($\text{NO} + \text{NO}_2 = \text{NO}_x$)
- Ozone (O_3)
- Volatile organic compounds (VOCs)
 - Benzene
 - Toluene
 - Isoprene
- Sulphur dioxide (SO_2)
- Methane (CH_4)
- Carbon dioxide (CO_2)

Air pollution is bad

Emissions of O₃ and PM cause deaths all over the world.



Source: IHME, Global Burden of Disease

Figure 1: The number of deaths attributed to outdoor ozone and particulate matter pollution per 100,000 in 2017.

What we did

We made some measurements using some instruments. We calibrated the instruments every day because we wanted the data to be good.

Table 1: Instrumentation list.

Variable	Instrument
CH ₄	Los Gatos Research Ultraportable Greenhouse Gas Analyzer
CO ₂	Los Gatos Research Ultraportable Greenhouse Gas Analyzer
H ₂ S	ThermoFisher Model 250
NO _x	Teledyne T200UP
O ₃	ThermoFisher Model 49i Ozone Analyser
PM ₁₀	Fidas 200

Results

The Earth is getting warmer as more CO₂ is emitted.

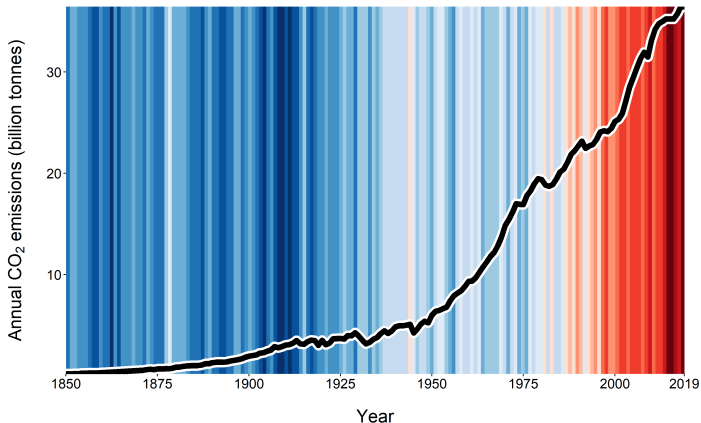


Figure 2: "Climate stripes" showing the global average temperature compared to a 1971-2000 reference period. Superimposed is the annual global CO₂ emissions.

Take home message

Air pollution is bad for our health and effects the climate of our planet.