

Assignment 1

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A look into greenhouse gas emissions concentrations

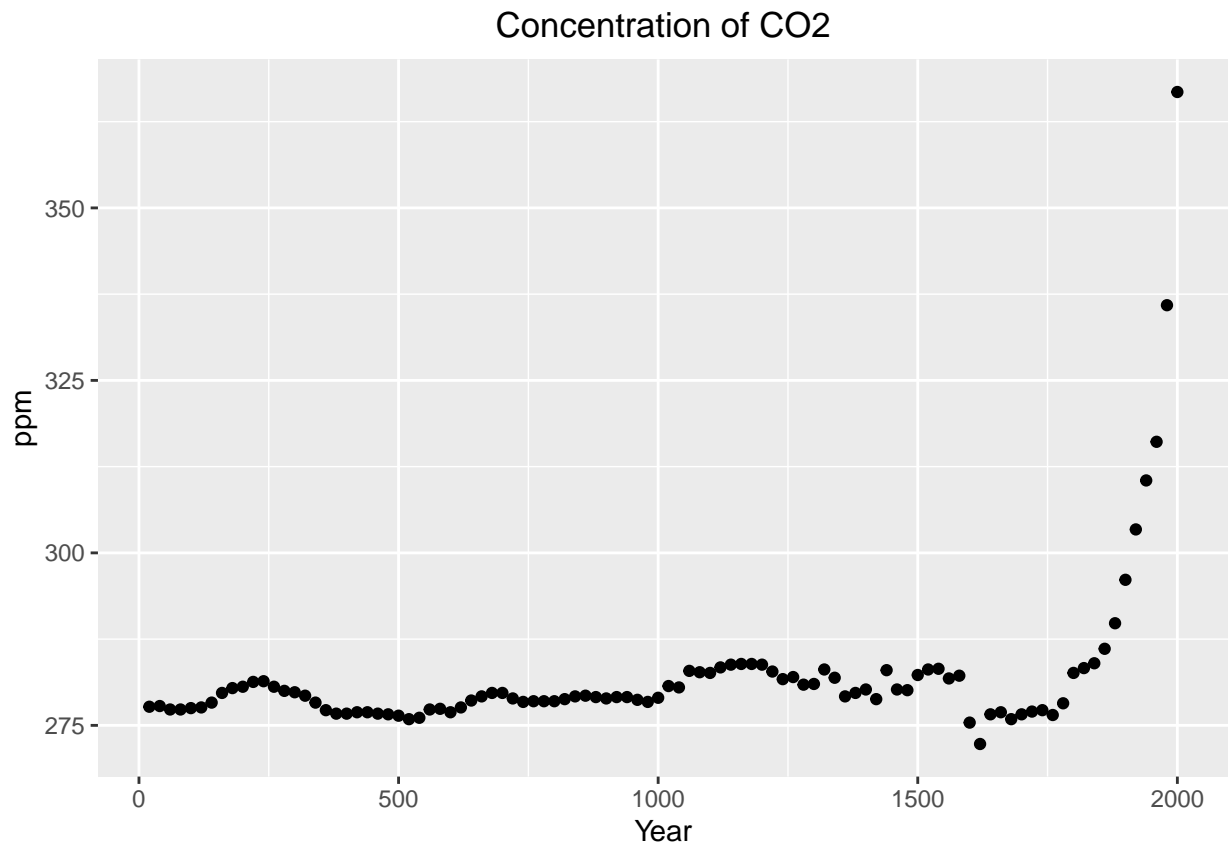
As (Hsiang and Kopp 2018) explains, humans has engaged in large-scale transformation of natural systems for millennia, but since the industrial era, every home lit by coal or natural gas-fired power plant and every petroleum-powered train, plane, and motor vehicle has contributed to the net accumulatiuon of carbon dioxide (CO₂) in the atmosphere.

In this document, I explore the concentrations of greenhouse gas emissions using data from the Data Science Lab (dslab). The data measures the concentrations of the three main greenhouse gases carbon dioxide, methane and nitrous oxide. The data was collected from the Law Dome Ice Core in Antarctica. Selected measurements are provided every 20 years from 1 to 2000 CE (MacFarling Meure et al. 2006)

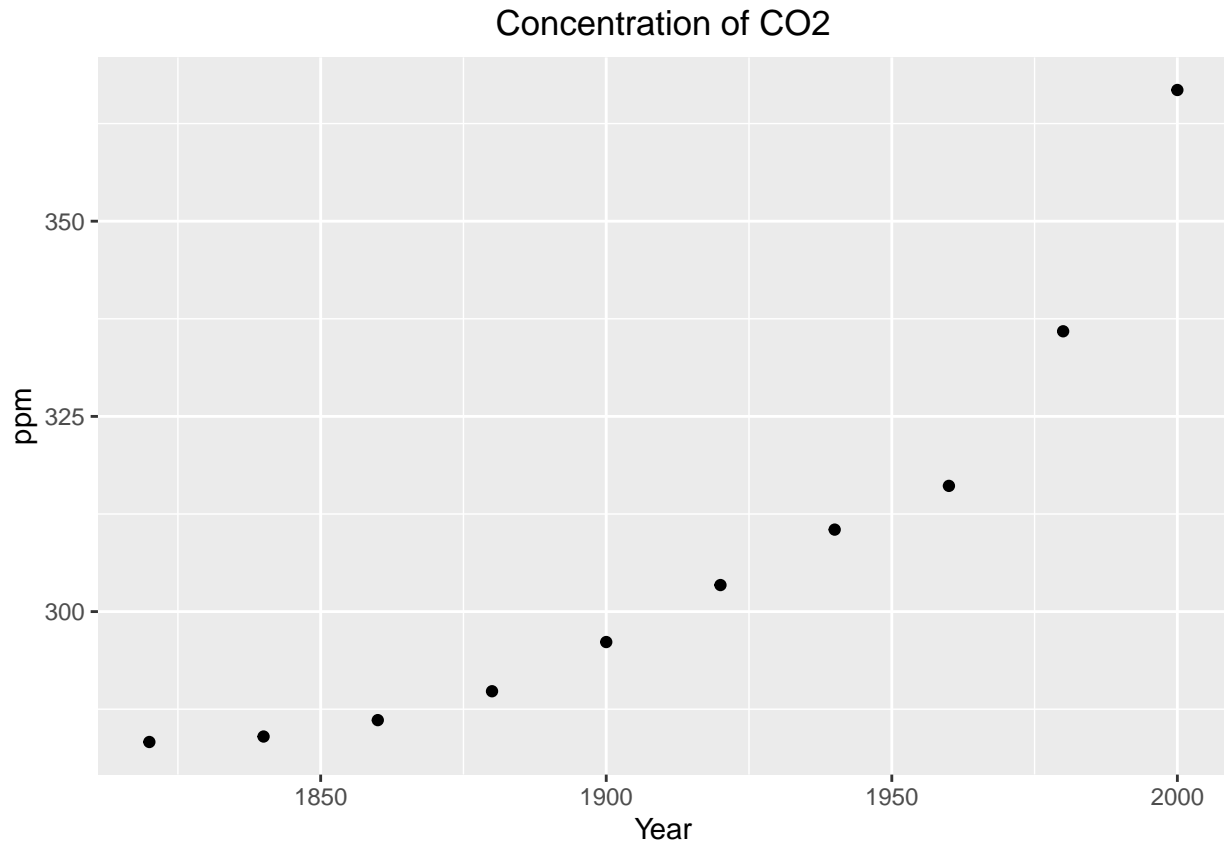
##	year	gas	concentration
##	Min. : 20	Length:100	Min. :272.3
##	1st Qu.: 515	Class :character	1st Qu.:277.6
##	Median :1010	Mode :character	Median :279.2
##	Mean :1010		Mean :282.1
##	3rd Qu.:1505		3rd Qu.:282.2
##	Max. :2000		Max. :366.8

Concentration of CO₂ emissions in time

In figure 1 (referred this) we can observe the increase of the concentrations of CO₂ emissions in the last 2000 years.



If we look closer into the last 200 years where human activity have increase after the industrial revolution, the increase is striking.



References:

- Hsiang, Solomon, and Robert E Kopp. 2018. "An Economist's Guide to Climate Change Science." Working Paper 25189. Working Paper Series. National Bureau of Economic Research. <https://doi.org/10.3386/w25189>.
- MacFarling Meure, C., D. Etheridge, C. Trudinger, P. Steele, R. Langenfelds, T. van Ommen, A. Smith, and J. Elkins. 2006. "Law Dome Co₂, Ch₄ and N₂o Ice Core Records Extended to 2000 Years Bp." *Geophysical Research Letters* 33 (14). <https://doi.org/10.1029/2006GL026152>.