

# MONTHLY RESOLUTION FOSSIL-FUEL-DERIVED CARBON DIOXIDE EMISSIONS FOR THE COUNTRIES OF THE NORTH AMERICAN CARBON PROGRAM

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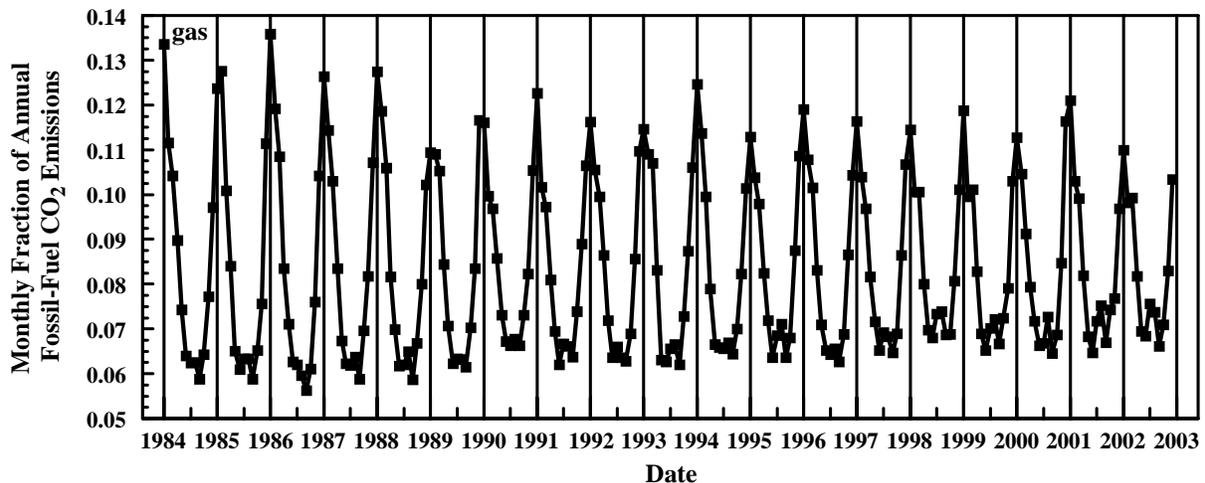
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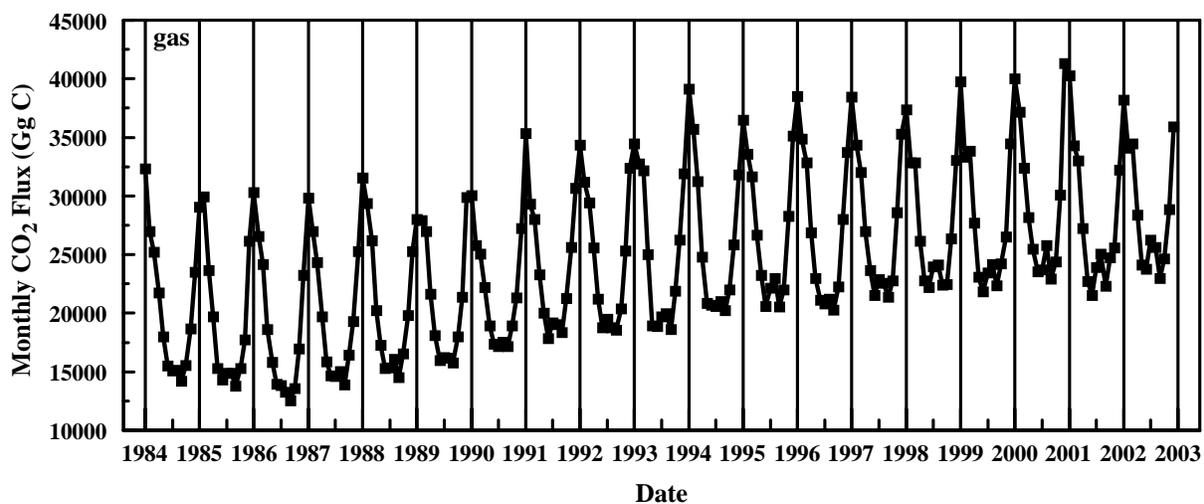
## ABSTRACT

Examination of national statistical databases has allowed for the widely-used data set on annual, fossil-fuel-derived, carbon dioxide emissions (maintained by the Carbon Dioxide Information Analysis Center (CDIAC)) to be subdivided into monthly time intervals. This analysis focused on statistical parameters that represent the solid, liquid, and gaseous fuels consumed in each country at monthly time scales. An intermediate product of this analysis was the fraction of the annual total consumption occurring in each month for each fuel. Monthly fractions were multiplied by the annual carbon dioxide emission value to obtain monthly emission estimates. A benefit of this approach is monthly and annual emissions time series that are mutually consistent. This presentation will give monthly emissions for multiple years for the United States, Canada, and Mexico. All data have been updated since the Fall 2004 AGU presentation of this work. The monthly data by state and province provide enough detail to begin to describe how the annual cycle of emissions varies spatially (i.e., whether emissions peak in the summer, in the winter, or are relatively uniform throughout the year).

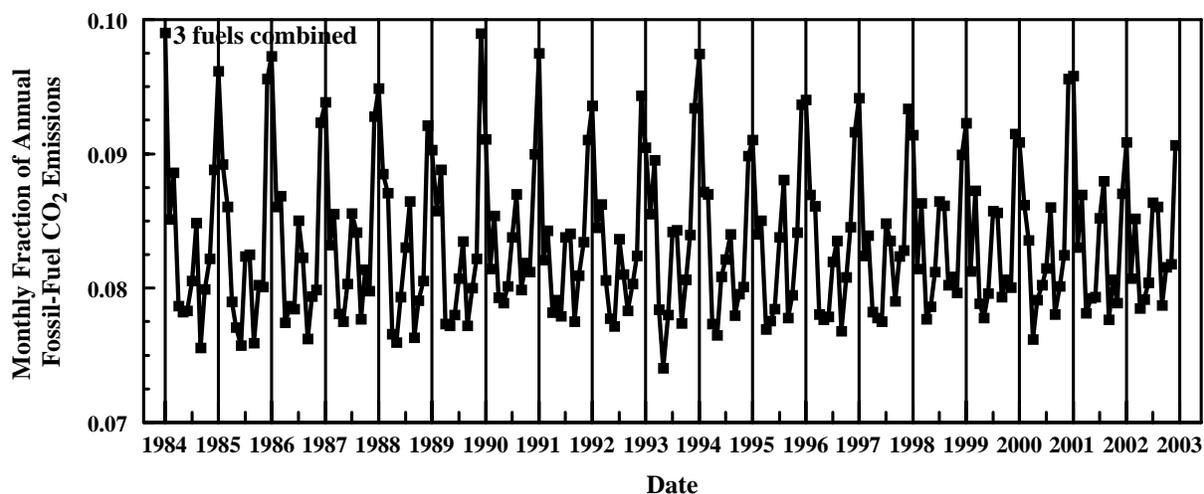
The figures below display data for the United States to illustrate the data generated; the poster will include similar data for Canada and Mexico. The first figure shows the relative proportions of U.S. natural gas consumption at a monthly time scale (the poster will contain similar figures for solid and liquid fuels also). The figure shows the emission of carbon dioxide in terms of a monthly fraction, where the 12 monthly fractions for a given year sum to unity. Emissions from natural gas were chosen for this figure as they display the largest interannual variability: a range of 8%.



Absolute monthly emissions are obtained by multiplying the monthly fractions displayed in the first figure above by the annual carbon dioxide emissions (as obtained from CDIAC) for that year and fuel. The second figure displays these absolute emission fluxes.



Individual fuel fluxes are useful for further calculations (e.g., those involving isotopic signatures), however data for all three fuels (i.e., solid, liquid, and gaseous) can be combined for less detailed calculations. An example of the relative monthly fluxes for all three fuels is shown in the third figure.



An example of the absolute monthly fluxes for the sum of all three fuels is shown in the fourth figure.

