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Is the Airborne Fraction of Anthropogenic Carbon Dioxide Increasing?

ScienceDaily (Dec. 31, 2009) — Most of the carbon dioxide emitted by human activity does not remain in the atmosphere, but is instead absorbed by the oceans and terrestrial ecosystems. In fact, only about 45 percent of emitted carbon dioxide stays in the atmosphere.

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However, some studies have suggested that the ability of oceans and plants to absorb carbon dioxide recently may have begun to decline and that the airborne fraction of anthropogenic carbon dioxide emissions is therefore beginning to increase.

Many climate models also assume that the airborne fraction will increase. Because understanding of the airborne fraction of carbon dioxide is important for predicting future climate change, it is essential to have accurate knowledge of whether that fraction is changing or will change as emissions increase.

To assess whether the airborne fraction is indeed increasing,

Wolfgang Knorr of the Department of Earth Sciences at the University of Bristol reanalyzed available atmospheric carbon dioxide and emissions data since 1850 and considers the uncertainties in the data.

In contradiction to some recent studies, he finds that the airborne fraction of carbon dioxide has not increased either during the past 150 years or during the most recent five decades.

The research is published in *Geophysical Research Letters*.

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New research finds that the airborne fraction of carbon dioxide has not increased either during the past 150 years or during the most recent five decades, contrary to some recent studies. (Credit: iStockphoto)

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Journal Reference:

1. Knorr, W. **Is the airborne fraction of anthropogenic CO₂ emissions increasing?** *Geophysical Research Letters*, 2009; 36 (21): L21710 DOI: [10.1029/2009GL040613](https://doi.org/10.1029/2009GL040613)

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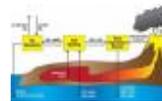
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