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An approach to removing large quantities of atmospheric greenhouse gases

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A method for removing atmospheric carbon dioxide (CO_2) and water vapor is proposed. The method sprays clouds with alkaline compounds to significantly increase the solubility of CO_2 in the cloud water, providing for much higher than normal levels of CO_2 to be absorbed by rain droplets. The CO_2 is transported to the ground for sequestration in surface and/or ground water, and available for carbon fixation by plants and organisms. Presented calculations estimate that 38 gi-gatonnes of atmospheric CO_2 could be removed per year by applying the process over 0.08% to 2.4% of the Earth's surface. Laboratory experiments that grew multiple edible plant species irrigated with the modified rainwater indicated yield benefits. A concept for removing atmospheric methane (CH_4) is also presented. Powerful lasers would ionize the CH_4 to form CO_2 that could then be removed by the alkaline-enhanced rainfall method.

Biography

Paul A Comet has degrees in Geology and Micropaleontology from London University (QMC) & a PhD in Organic Geochemistry from the School of Chemistry, Bristol University, UK. His Post-doctoral work at the University of Newcastle was concerned with hydrous pyrolysis of kerogen analysis using Ocean Drilling Project samples, specifically oriented to terpenoid stereochemical pressure/temperature transformations. He has worked in the oil service industry as a Petroleum Geochemist at Core Labs., in Singapore and Indonesia, and also as an Inorganic Geochemist at Halliburton, recently, working on the mineralogy of unconventional reservoirs. He also worked at Texas A & M (GERG) as an Associate Research Scientist mapping the oils of the Gulf of Mexico. He has more than 40 publications & has been working for more than 10 years on solutions for ameliorating climate change.

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