

Research Highlights

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Risky business

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Injection of aerosols into the atmosphere could be used to cool the climate in the case of a planetary emergency. But stratospheric 'geoengineering' would have considerable risks and costs, warns a new study.

Alan Robock and colleagues at Rutgers University in New Jersey evaluate the pros and cons of various methods of injecting a sulphur gas into the stratosphere. Among the dangers of such a scheme is the risk of substantial ozone depletion, including delayed recovery of the Antarctic ozone hole. Other risks include regional drought, ocean acidification, a reduction in sunlight and the end of blue skies. The cost would depend on how the gas was deployed; using existing US military planes would be the cheapest option, at roughly several billion dollars per year, say Robock and colleagues. Lofting the gas using artillery shells or balloons would be more expensive. Other options, such as pumping the gas through a tall tower or lifting it into the stratosphere using a space elevator, may be possible in the future, say the scientists, but the costs of those methods cannot be evaluated yet.



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Associated dangers, rather than cost, will ultimately limit the potential of geoengineering as a solution to climate change, conclude the authors.

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