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Article
Effect of Stratospheric Aerosols on Direct Sunlight and Implications for Concentrating Solar Power

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Abstract

Light scattering calculations and data show that stratospheric aerosols reduce direct sunlight by about 4 W for every watt reflected to outer space. The balance becomes diffuse sunlight. One consequence of deliberate enhancement of the stratospheric aerosol layer would be a significant reduction in the efficiency of solar power generation systems using parabolic or other concentrating optics. There also would be a reduction in the effectiveness of passive solar design.

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