

The tendencies for an increase in surface solar radiation (“brightening”) discussed in earlier studies for the 1990s are sustained at the beginning of the 2000s in several parts of the world, as documented at sites in Europe, the US and Korea. Stations in other regions suggest that the “brightening” levels off after 2000 (sites in Japan, Antarctica), or provide some indications for a reversal back to a dimming (sites in China, Central America). In summary, many sites still continue to observe an increase in surface solar radiation in the years following 2000, but the overall signal is not as evident and coherent as during the 1990s, with more sites showing stabilizing or even declining insolation. One may also speculate that the recent decrease in some areas of significant overall brightening may favor a more moderate temperature increase in the early 2000s compared to the 1990s, when brightening more substantially added to the greenhouse-induced warming. Overall global warming since the turn of the millennium may therefore be more readily attributable to the enhanced greenhouse effect, and no longer suppressed by surface solar dimming as in the period from the 1950s to 1980s or as enhanced by surface solar brightening as from the 1980s to 2000.

Reference(s)

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