Science & Technology

Do We Underestimate the Speed and Scale of Global Warming?

Temperatures are beginning to rise much faster than expected, claims a new study.

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A group of climate scientists led by James E. Hansen, the preeminent climatologist who famously sounded the alarm about global warming in the 1980s and who now directs the Columbia Climate School's Climate Science, Awareness,

and Solutions center, has released a new study asserting that temperatures could begin to rise much faster than previously expected over the next decade.

The study, which appears in the journal *Oxford Open Climate Change*, is coauthored by climate scientists at a dozen institutions, including NASA, the University of California, the University of Arizona, the University of Kansas, Peking University, and the Chinese Academy of Sciences. In it, Hansen and his colleagues argue that many experts in their field have underestimated how sensitive the earth's climate is to rising levels of atmospheric CO2, in part because of flawed interpretations of our planet's climate history. In addition, they say that other types of air pollution have been blocking a significant amount of solar radiation from reaching the earth's surface and hence hiding the full warming potential of our greenhouse-gas emissions. As air pollution decreases in response to stricter environmental regulations, they write, more solar radiation will soon reach the earth's surface and the rate of annual warming could jump 50 percent.

The new paper has generated controversy, since it challenges the scientific consensus. For example, many scientists dispute the conclusion — central to Hansen and his colleagues' thesis — that recently discovered evidence indicates that global temperatures are much more sensitive to CO2 levels than previously assumed. But others say the paper should be taken seriously. "I think Hansen's pessimism is warranted," Stanford environmental scientist Rob Jackson recently told the *Guardian* . "He stood up thirty-five years ago and sounded the alarm — and the world mostly ignored him, and all of us."

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