

## **Solar Influences on Climate Change and Resulting Impacts: Past and Near Future**

Don Wuebbles

Department of Atmospheric Sciences  
University of Illinois  
Urbana, IL

The scientific evidence suggests that the Earth's climate during the last decade is warmer than it has been in thousands of years. The scientific evidence also strongly indicates that the global changes in the climate seen over the last four decades are largely the result of human activities, basically from the increasing concentrations of heat-trapping gases (and particles) in the atmosphere such as emissions of carbon dioxide that are primarily increasing as a result of our burning of fossil fuels. As a result, climate change is recognized as one of the world's most urgent environmental problems, with the potential to affect natural resources, ecological systems, human health, infrastructure and economies throughout our planet. However, it is also well recognized that the Sun plays a huge factor in our climate and is a significant factor in natural climate variability. A few scientists (and many blogs) have even suggested that the variations in the Sun are the primary factor responsible for the observed climate changes. So what role has the Sun played in the climate changes in recent decades and over longer time periods? What role could the Sun play in the projected climate over the coming decades? I will examine these and other questions in this presentation, including the resulting effects on the biosphere. Not only could the Sun influence the extent of the projections for impacts resulting from human-induced climate change, but the resulting effects on the biosphere could also be an important feedback on the resulting climate.