

Abstract of Presentation

This presentation will focus on the main findings of the *Special Report on Aviation and the Global Atmosphere*, which was prepared by the Intergovernmental Panel on Climate Change (IPCC), at ICAO's request. Since concerns regarding aircraft engine emissions relate not only to climate change, but also to depletion of the ozone layer, the *Special Report* was prepared in collaboration with the Scientific Assessment Panel to the Montreal Protocol on Substances that Deplete the Ozone Layer.

Aircraft emit gases and particles which alter the atmospheric concentration of greenhouse gases, trigger the formation of condensation trails and may increase cirrus cloudiness, all of which contribute to climate change. Aircraft are estimated to contribute about 3.5 per cent of the total radiative forcing (a measure of change in climate) by all human activities. This percentage excludes the effects of possible changes in cirrus and it is projected to grow, primarily because of aviation's rapid rate of growth.

Although improvements in aircraft and engine technology and in the efficiency of the air traffic system will bring environmental benefits, these will not fully offset the effects of the increased emissions resulting from the projected growth in aviation.

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Joyce Penner was one of the two Coordinators of the IPCC Special Report on Aviation and the Global Atmosphere.

She is a professor in the Department of Atmospheric, Oceanic, and Space Sciences at the University of Michigan. Prior to that she served as Division Leader of the Global Climate Research Division at the Lawrence Livermore National Laboratory. She is an Associate Editor for the Journal of Geophysical Research and the Journal of Climate. She has served on several scientific advisory committees, including the National Academy of Sciences Atmospheric Chemistry Committee and the National Academy of Sciences Panel on Aerosol Forcing and Climate Change. She has served as Secretary of the Atmospheric Sciences Section of the American Geophysical Union.