The Fourth Annual Harold I. Schiff Faculty of Pure and Applied Science Lectureship Series

Presented by:

Dr. Guy P. Brasseur

National Center for Atmospheric Research
Boulder, Colorado

on:

The Changing Atmosphere: Natural Fluctuations and Human Perturbations

Thursday, November 24, 1994
3:00 p.m.

Curtis Lecture Hall "G"
York University

Turn over for abstract

Abstract

During the Earth's history, the chemical composition of the atmosphere has evolved as a result of natural fluctuations in the climate system. Since the agricultural and industrial revolutions, the atmospheric abundance of several radiatively and/or chemically active trace gases (CO_2, CH_4, N_2O, chlorofluorocarbons, etc.) has increased dramatically, leading to potential greenhouse warming. Over the last decades, stratospheric ozone has been depleted, especially at mid- and high latitudes, leading to significant increase in the UV-B radiation level. Changes in tropospheric ozone have also been reported, while the oxidizing capacity of the atmosphere seems to have remained relatively unchanged.

The lecture will review these observed changes, and analyze the processes involved, using global chemical-transport models, developed to diagnose observations and to predict the future state of the atmosphere. Special attention will be given to the effect on stratospheric ozone of the 11-year solar cycle, as well as of volcanic eruptions (e.g., Mt. Pinatubo). The impact of anthropogenic emissions (including aircraft effluents) on the composition of the global troposphere will also be discussed.

Biography

Dr. Brasseur was born in Brussels, Belgium; he is a permanent U.S. resident. He received his Docteur en Sciences Appliquées from the Free University of Brussels in 1976. He has been a Senior Scientist at NCAR since July 1990 and Director of the Atmospheric Chemistry Division since April 1990. In addition to publishing numerous articles in referred journals; he also serves as editor-in-chief the Journal of Geophysical Research--Atmospheres. He has been a lecturer at the University of Colorado since February 1991. He is also a lecturer at the Free University of Brussels Department of Earth Sciences. He also serves on various national and international scientific committees.

You are invited to attend a reception in the Faculty Club, S166 Ross Bldg., after the seminar.

For further information please call Carol Francis, 736-5410