

DESCRIPTION FOR THE GENERAL PUBLIC

Identification of processes responsible for anomalous total ozone variability in the Northern Hemisphere mid-latitudes

Ozone is an atmospheric trace gas that plays a central role in a variety of atmospheric processes. Ozone interacts strongly with incoming solar radiation, driving the large-scale temperature structure of the stratosphere and shielding the troposphere from much of the harmful incoming solar ultraviolet radiation. Ozone interacts with outgoing terrestrial radiation in the infrared wavelength bands, thereby playing a role as a greenhouse gas.

Recovery of the stratospheric ozone is one of the pressing ecological issues of the 21st century. At the same time, it is one of the most important scientific topics in the area of atmospheric and climate modelling. The pioneering nature of the project is to use statistical modelling to identify specific regions with a low recovery rate of the total ozone followed by application of a chemistry climate model to explain dynamical-chemical interactions based on process studies. The proposed methodology creates a synergy between statistical and deterministic total ozone modelling.

Project results will be shared with the scientific community through publications, conference presentations. Expertise and knowledge gained in the course of the project will have direct application in modelling of UV fluxes for application in medical studies of human exposure to solar UV radiation.