

19 JUNE 2002 : PRESIDENTIAL ADDRESS

**David Martin Burridge CB** - Global Analyses of the Atmosphere - 40 years of data for research

The ECMWF Re-Analysis of 40 years of data (the ERA-40 project) will provide a new synthesis of in-situ and remotely-sensed measurements made over the period since mid-1957, when a major improvement was made to the atmospheric observing system in preparation for the International Geophysical Year, 1958. The basic analysed variables will include not only the conventional meteorological wind, temperature and humidity fields, but also stratospheric ozone and ocean-wave and soil conditions.

The availability of ERA-40 analyses will also revitalize the use of data from past field experiments in the improvement of climate and weather forecasting models. ERA-40 products will be enhanced by short periods of higher resolution global assimilation. This will enable better exploitation of the observational data from experiments such as GATE (1974), ALPEX (1982) and TOGA-COARE (1992-93).

I shall review the progress with the ERA-40 project and present results of a number of diagnostic and numerical prediction studies that have been carried out with the analyses that have been produced so far. The latter will include results from two case studies of great historical importance.