Mission Statement

The Network for the Detection of Mesopause Change (NDMC) is a global program with the mission to promote international cooperation among research groups investigating the mesopause region (80-100 km) with the goal of early identification of changing climate signals.

This program involves the coordinated study of atmospheric variability at all time scales, the exchange of existing know-how, and the coordinated development of improved observation, analysis techniques and modeling. The initial emphasis is on mesopause region airglow techniques utilizing the existing ground-based and satellite measurement capabilities.

Participation or association of researchers using other techniques in the same altitude region will be actively developed. NDMC is concerned with coupling other techniques in the same altitude region with its green emission line, and satellite measurement capabilities.

Objectives

The overall question: is the climate of mesopause region (80-100km) changing? If so, how and why?

- Identify and quantify climate changes by monitoring key parameters such as temperatures in the mesopause region, airglow brightness for the early characterization of climate signals; Identify and quantify variability at different time scales such as seasonal variations and solar cycle effects.
- Detection of solar activity effects at all time scales (“Space Weather”)
- Answering other scientific questions related to atmospheric dynamics at different time scales including the description and the causes of the variability of periodic and quasi-periodic processes:
  - acoustic and gravity waves,
  - tides and planetary waves, and
  - seasonal and interannual variations.
- Also, episodic events caused by external forcing shall be monitored.
- Validation of satellite instruments and its use for intercomparison of ground-based instruments
- Cooperation in the development of instrumentation

Geographical distribution of NDMC measurement sites. Presently, NDMC includes 67 sites addressing airglow observation. (Status: April 2009)

NDMC network operations have officially started in 2007. NDMC management is funded by the Bavarian State Ministry of the Environment and Public Health.

http://wdc.dlr.de/ndmc

The NDMC web sites are hosted by the ICSU/WMO World Data Center for Remote Sensing of the Atmosphere (WDC-RSAT), which serves as a communication and data management platform for NDMC. WDC-RSAT is a service of the DLR-German Remote Sensing Data Center.

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Wideband Detector for Aerosol

Limb view of the Earth’s atmosphere. The airglow in the 80 - 100 km altitude region is seen as a bright narrow layer. (Source: NASA)