

the network for the detection of mesopause change

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.

NDMC is continuously evolving and plans new observing sites and facilities in the next years to obtain a well-balanced global coverage of its stations to adequately and reliably assess global issues. It is affiliated with the UN World Climate Research Program, WCRP.

While "global change" means increasing temperatures in the lower atmosphere due to increased shielding of outgoing infrared radiation by higher concentration of greenhouse gases, above heights where greenhouse gases are effective, temperatures must go down. This cooling effect is expected to be much stronger than the heating at ground level, because of the smaller heat capacity of the rarified air, so that the long-term trend should be easier to detect in the upper atmosphere.

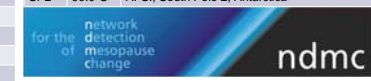
In the mesopause region, where temperature data are readily available from airglow observations for up to the last few decades, we have first indications that such a cooling does indeed exist, more strongly in some places, and weaker in other parts, so that efforts to intensify and extend these studies are worthwhile.

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.

legend

- station's data archived in near real-time at WDC-RSAT
- station with multiple investigators, data stored at WDC-RSAT
- station in preparation
- existing station to be equipped with DLR owned instrument
- station of a time limited measurement campaign
- for many other stations, partially substantial data sets are available via WDC-RSAT

EUR	80.0°N	Eureka, Canada	MIH	42.6°N	Millstone Hill, USA	KGI	62.1°S	C.Ferraz, K. George Island, Antarctica
NAS	78.9°N	Ny-Ålesund, Svalbard	SZB	42.4°N	Stara Zagora, Israel	KSJ	62.2°S	King Sejong, King George Island, Antarctica
KH1	78.2°N	Kjell Henriksen 1, Svalbard	BLO	41.9°N	Bear Lake Observatory, USA	ROT	67.6°S	Rothera Station, Antarctica
KH2	78.2°N	Kjell Henriksen 2, Svalbard	ABA	41.8°N	Abastumani, Georgia	DAV	68.6°S	Davis Station, Antarctica
RE1	74.7°N	Resolute Bay 1, Canada	PAL	39.6°N	Palma de Mallorca, Spain	NEU	70.7°S	Neumayer III, Antarctica
RE2	74.7°N	Resolute Bay 2, Canada	CAT	37.5°N	Catania, Italy	HAL	75.5°S	Halley Station, Antarctica
ALR	69.3°N	ALOMAR, Norway	OSN	37.1°N	Observatorio de Sierra Nevada, Spain	ARR	77.9°S	Arrival Heights, Antarctica
SSF	67.0°N	Sondrestromfjord, Greenland	SGK	34.8°N	Shigaraki, Japan	SP1	90.0°S	A.-S., South Pole 1, Antarctica
MAI	63.0°N	Maimaga, Russia	SOC	34.1°N	Socorro, USA	SP2	90.0°S	A.-S., South Pole 2, Antarctica
STO	57.4°N	Stockholm/Onsala, Sweden	TAV	32.1°N	Tel Aviv University, Israel			
ZVE	55.7°N	Zvenigorod, Russia	STA	31.0°N	Sata, Japan			
MAY	53.4°N	Maynooth, Ireland	NAI	29.4°N	Nainital, India			
IR1	52.0°N	Irkutsk 1, Russia	DTB	29.0°N	Daytona Beach, USA			
IR2	52.0°N	Irkutsk 2, Russia	MA1	20.7°N	Maui, Hawaii			
WUP	51.3°N	Wuppertal, Germany	GAD	13.5°N	Gadanki, India			
OPN	48.1°N	Oberpfaffenhofen, Germany	KTB	0.2°S	Kototabang, Indonesia			
HPB	47.8°N	Hohenpeißenberg, Germany	CAR	7.4°S	Cariiri Airglow Observatory, Brazil			
UFS	47.4°N	Schneefernerhaus / Zugspitze, Germany	CAP	22.7°S	Cachoeira Paulista, Brazil			
OHP	43.9°N	Observatoire de Haute-Provence, France	SMA	29.7°S	Santa Maria, Brazil			
RIK	43.5°N	Rikubetsu, Japan	ALO	30.2°S	Andes Lidar Observatory, Chile			
ALM	43.1°N	Almaty, Kazakhstan	LEO	31.8°S	El Leoncito, Argentina			
DL1	42.9°N	Delaware 1, Canada	ADE	34.4°S	Adelaide, Australia			
DL2	42.9°N	Delaware 2, Canada	MJO	44.0°S	Mount John, New Zealand			



wdc for remote sensing of the atmosphere
<http://wdc.dlr.de>
<http://wdc.dlr.de/ndmc>

DLR Deutsches Zentrum für Luft- und Raumfahrt