

MEMBER COUNTRY: INDIA
National Report to SCAR for ye 2007-08

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3)						
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2)						
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Scientific Research Program							
1) 2) 3) 4)	ACE						
1) 2) 3) 4)	AGCS						
1) 2) 3) 4)	EBA						
1) 2) 3) 4)	ICESTAR						
1) 2) 3) 4)	SALE						
	Activity	Contact Name	Address	Telephone	Fax	Email	web site

ACTION GROUPS						
1) 2) 3) 4) insert others as needed						
EXPERT GROUPS						
1) 2) 3) 4) insert others as needed						
JCADM						
1) 2)	Shri. Mirza Javed Beg	Project Director, Inf., & Comm. Tech. Div, NCAOR, Vasco Ministry of Earth Sciences, Headland Sada, Goa - Pin-403804, INDIA.	91-832-2525521	91-832-2525520	mjbeg@ncaor.org	
NATIONAL ANTARCTIC DATA CENTRE						
SCAR DATABASE						
insert name of database for which your country has responsibility						

A BRIEF SUMMARY OF SCIENTIFIC HIGHLIGHTS:

31 projects from 18 different premier institutes / universities of India were taken up during the said period of 2007-08. One student participated under the Student participation Scheme. Brief highlights have been provided under subheads:

Atmospheric & Meteorology

Study of VLF phenomenon through Direction Finding Techniques at Antarctica is aimed at the formation and deformation of layers of ionosphere and to observe its regularity by monitoring the VLF signal. India Meteorological Department collects meteorological parameters over Antarctica to understand the weather patterns as also its relationship if any with the Indian monsoon. Continuous monitoring and recording of [a]atmospheric total ozone [b]ground UVB [c]concentration of SO₂ and NO₂, vertical profile of O₃ and NO₂ Brewer spectrophotometer

Geomagnetism

Magnetic observatory at "Maitri" for monitoring variation in Earth's magnetic field, which aims to study the storm - substorm relationship. This also aims to identify signatures in atmospheric electrical parameters, study in decline of Total Magnetic field 'F' as observed in Southern hemisphere. This would also help to monitor the ionospheric Total Electron Count (TEC), scintillation and tropospheric water vapour content. Global Electric Circuit (GEC) Expt. At Maitri The diurnal variations of GEC potential gradient and atmospheric some of the interesting feature of this study. The GEC component shows similar diurnal trend to worldwide thunderstorm activity, minimum near 0300UT and maximum near 1900 UT. Digital Fluxgate Magnetometer was installed at Larsemann Hills to record variations in three orthogonal components of Earth magnetic field. This would help us to understand the auroral current systems and this throw light on the auroral current system

Earth Science

Geology & Glaciology

Field observations on different shear zones adjoining Veetia Hills (Schirmacher area) was done to understand the correlation with Pan-African Orogeny. Geological mapping (1:2500 scale) of the proposed new station site of the Larsemann Hills area was carried out. Temporal and spatial variations of energy balance of different snow and ice media in Antarctica was carried out using Radio based Remote Telemetry System. This would help to measure daily variation of ambient temperature, maximum and minimum temperature, snow/ice temperature, incoming and outgoing radiation.

Geophysics

State of the art digital seismograph consisting of broad band seismometer, data acquisition system and GPS for time synchronization was also tested (at Maitri).

Environmental and Biology

Palaeoclimate Study initiatives

Sub-surface sediment samples from modern lakes both in Schirmacher as also in the Larsemann Hills. Collection of samples for diatom and algal spores were also carried out.

Environmental monitoring

Collection of surface water samples from water bodies of Schirmacher and Larsemann Hills were carried out for physico-chemical and trace metal analysis. Diurnal variations in primary productivity and physico-chemical characteristics of Priyadarshani and some other important water bodies are also carried out. Land based anthropogenic impact of coarse particles on Antarctic shelf (IPY P.No.129) High volume sampler (HVS) was operated during the journey by ship as also at Maitri and Larsemann Hills, to understand the properties of aerosols and suspended particles and monitoring ambient air quality. Sun photometer was also operated.

Medical Sciences

Structured and longitudinal assessment for psychological aspects of the Antarctic expedition members is carried out to understand the short term as also the long term changes in their general and psychological health. The data obtained shall be analysed at All India Institute of Medical Sciences, New Delhi.