

MEMBER COUNTRY: INDIA
National Report to SCAR for year 2011-12

Activity	Contact Name	Address	Telephone	Fax	Email	web site
National SCAR Committee						
	Rasik Ravindra, Chairman	[1] Director, National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	91-832-2525501/2520876	91-832-2520877	rasik@ncaor.org; rasikravindra@gmail.com	www.ncaor.gov.in
	Dr. N C Mehrotra	Director, Birbal Sahni Institute of Paleobotany, Lucknow-226007, India	91-522-2740470	91-522-2740485	mehrotrabsip@rediffmail.com	
	Dr. Anil Joshi	Director, Polar Studies Division, Geological Survey of India, Faridabad - 121001, India	91-129-2417335	91-129-2417335	joanil@rediffmail.com	
	R K Sharma	Advisor, Ministry of Earth Sciences, Prithvi Bhavan, Lodhi Road, New Delhi	91-11-24669516	91-11-24669778	rks@nic.in; krram@yahoo.com	
	Dr. Rahul Mohan, Member Secretary	Programme Director, National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	91-832-2525531	91-832-2520877	rahulmohangupta@gmail.com	
SCAR Delegates						
1) Delegate	Dr. Shailesh Nayak	Ministry of Earth Sciences, Mahasagar Bhavan, Block 12, CGO Complex, Lodhi Road, New Delhi - 110 003	91-11-24669506	91-11-24669778		
2) Alternate Delegate	Rasik Ravindra	Director, National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	91-832-2525501/2520876	91-832-2520877	rasik@ncaor.org; rasikravindra@yahoo.co.in;	www.ncaor.gov.in
Standing Scientific Groups						
Life Sciences						
1)	Dr. B. Ingle	National Institute of Oceanography, Dona Paula, Goa-403 004	91-832-2450242	832245060	baban@nio.org	
2)						
3)						
4)						
Geosciences						
1)	Dr. S. Mukherji	Geological Survey of India, NH5, NIT, Faridabad - 121 001;	91-9871824949		mukherjeesharad@rediffmail.com	
2)	Dr. S. Rajan	National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	0832 2525511	0832 2520871	rajan@ncaor.org	
3)	Dr. N. C. Pant	Centre for Advanced Study, Department of Geology, Delhi University, Delhi-110007	91-9953781350		pantnc@rediffmail.com	
4)	Dr V M Tiwari	National Geophysical Research Institute uppal Road Hyderabad 500 003	91-40 2343 2494	91 40 2343 4651	vmtiwari@ngri.res.in	
Physical Sciences						
1)	Dr. S. L. Jain	Emeritus Scientist, National Physical Laboratory, Dr.K.S.krishnan Marg, New Delhi-110 012	91-11-45608584	91-11-45609310	sljain@mail.nplindia.ernet.in	
2)	Dr C G Deshpande	Homi Bhabha Road Dr Homi Bhabha Road Pashan	91 20 2589 3600	+91 20 2665 5961	cgdesh2004@yahoo.com	
3)	Dr. Shailendra Shaini	National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	91-832-2525521	91-832 2520871	shailendra.saini@gmail.com	
4)	Rasik Ravindra	National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	91-832 2520876	91-832 2520871	rasikravindra@gmail.com	

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Scientific Research Program						
ACE 1) 2) 3) 4)						
AGCS 1) 2) 3) 4)						
EBA 1) 2) 3) 4)						
ICESTAR 1) 2) 3) 4)						
SALE 1) 2) 3) 4)						

Activity	Contact Name	Address	Telephone	Fax	Email	web site
ACTION GROUPS						
1)Bipolar Action Group 2) 3) 4) insert others as needed	Dr.Thamban Meloth	Program Director (Lab.),National Centre for Antarctic & Ocean Research, Headland Sada, Goa - Pin-403804, INDIA.	0832-2525622	0832 2520877	meloth@ncaor.org	
EXPERT GROUPS						
1) 2) 3) 4) insert others as needed						
SCADM						
1) 2)	Shri Saktivel Samy	Head, ICTD, National Centre for Antarctic & Ocean Research Headland Sada, Goa - Pin-403804, INDIA.	91-832-2525515	91-832-2520877	vssamy@ncaor.org	
NATIONAL ANTARCTIC DATA CENTRE						
National Antarctic Data Centre of India is under construction						
SCAR DATABASE						
insert name of database for which your country has responsibility						

A BRIEF SUMMARY OF SCIENTIFIC HIGHLIGHTS:

14 projects from 10 different premier institutes / universities of India were taken up during the said period of 2011-12. In addition one scientific personnel participated, to carryout filming and photography. Brief highlights have been provided under subheads:

Atmospheric & Meterology

Collection of synoptic data measurements for the meterological parameters as also AWS data at Maitri.

Inonospheric studies: Ionosonde, VLF and GPS receiver are working properly at Maitri and the data being generated will be utilised to infer the ionospheric variation over Antarctic region.

Larsemann Hills:

Three instruments namely, DFM, GPS and AWS are being run successfully at Larsemann Hills.

Magnetic Measurements: at Maitri

- a) Study of geomagnetic storms and substorms through ground magnetic field observations using Digital Fluxgate Magnetometer.
- b) Study of the rapid decrease in the total geomagnetic field intensity observed at maitri using a Proton Precession Magnetometer.
- c) Study of Global Electric Circuit (GEC) monitoring the atmospheric vertical potential gradient, Maxwell current and air-Earth current using various electrometers and field mills-monitoring of the atmospheric weather using automatic weather station.
- d) Studies on Crustal Deformation, mass Balance and Ice Dynamics of Nivlisen Ice Shelf Using GPS measurement.
- e) Monitoring of ELF using Induction Coil Magnetometer (ICM).
- f) Monitoring of cosmic radio signal absorption using Imaging Riometer.

Snow and Avalanche Study Establishment (SASE)

Hourly observations of various snow-meteorological parameters (Incoming Solar Radiation, Outgoing Solar Radiation, Sun Shine duration, Net Radiation, Average Ambient Temperature, Maximum Temperature, Minimum Temperature, Instantaneous Temperature, Relative humidity, Wind Speed, Wind Direction, Atmospheric Pressure, Snow Surface Temperature, Snow Depth) have been taken over the continental ice sheet to estimate surface energy budget of the glacier.

Maitri is part of the net work that monitors the global lightning activity using the ground based VLF receivers and thus detecting the sferics.

Earth Science

Geology & Glaciology

Larsemann Hills: Experimental observation and recording of Tidal data on shore of Bharati Promontory. The NHO team did observation by Geodatic & GIS receivers on LH reference station & Betts Island.

Maitri: [A] Delineation of the Land-Ice-Sea [LIS] interface using Ground Penetrating Radar.

[B] Geological mapping of the nunataks between Schirmacher Oasis and Wolthat mountains.

[C] Glaciological Monitoring in Schirmacher Oasis Region.

[D] Lake profiling at Untersee, Gruber Mountains.

Point South of Priyadarshini Lake. Large Scale mapping on 1:5,000 scale with 5 Meter Contour Interval for an area bounded between the Latitudinal extent from 70° 45' 45'' S and 70° 46' 45'' S and Longitudes 11° 42' 00'' E and 11° 45' 30'' E.

Maitri: Continuous GPS monitoring and operation of permanent seismological observatory at Maitri to understand the seismotectonics and geodynamical processes between Antarctica and southern India peninsula.

[A] Hydrodynamics of the Indian sector of coastal Antarctica by utilizing XCTD and XBT probes.

[B] Satellite based DEM for monitoring Antarctic ice topography with special focus on DEM of Larsemann Hills by synergistic use of Imaging SAR, GLAS/ICES and GPS data points to produce accurate DEM.

[C] Biogeochemical studies of water bodies in and around the Indian station.

Maitri: Samples were collected for undertaking geochemical and petrological studies of the lamprophyres from Schirmacher Oasis and central Dronning Maud Land.

International Co-operation

Absolute-Gravity Measurements at Maitri by Finnish team: During January, a Finnish team worked with the Indian team at Maitri for Absolute Gravity meter data collection, relative gravity meter and GPS data on Continental Ice from the glacier; US [Tawani Expedition Team] and the GSI personnel undertook Lake profiling at Untersee, Gruber Mountains.

Human Physiology & Medicine

Station Doctors

- Medical examination of all subjects and compilation of a readily accessible database.