

## Scientists from SAC participated in 37<sup>th</sup> Indian Scientific Expedition to Antarctica (ISEA) for Cryospheric research

Cryosphere is an important element of Earth's System and plays a crucial role through the linkages and feedback mechanism with Atmosphere and Hydrosphere. Space Applications Centre ISRO, Ahmedabad is actively involved in Research related to developing techniques of utilising satellite data for observing changes (in continental ice as well sea ice) in polar regions for understanding impact of climate change for the last one and half decades. Data from various satellites such as Resourcesat-1/2/2A (IRS series), SARAL/AltiKa, Scatsat-1, Oceansat-2, RISAT-1 have been utilised to understand variability and causes of sea ice extents, surface elevation changes of icesheets, rates of surface melting, determination of sea ice thickness, monitoring of glaciers and icebergs etc. SAC also provides sea ice advisories based on interpretation of images acquired by sensors onboard Indian orbiting satellites to NCAOR for the safer navigation to Indian Scientific expeditions to Antarctica.

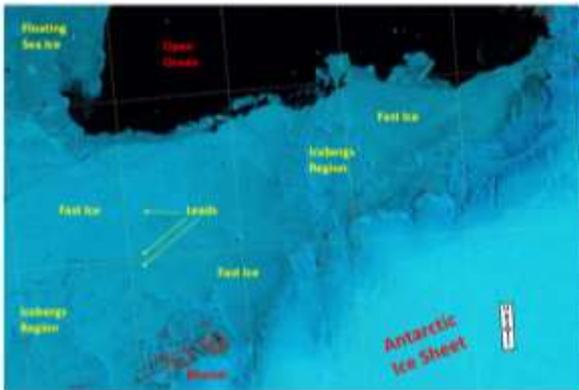
Scientists from SAC ISRO have been participating in Scientific expeditions to Antarctica and Arctic organized by National Centre for Antarctic and Ocean Research (NCAOR), an organ of Earth System Science Organisation (ESSO) under Ministry of Earth Sciences (MoES). In continuation of this program, Dr. Sushil Kumar Singh and Kum. Lakshmi Priya Prusty from SAC/ISRO, Ahmedabad have participated in 37<sup>th</sup> Indian Scientific Expeditions to Antarctica (ISEA) during December 2017 to February 2018. The main objective of this expedition was to collect the data using a wide range of instruments such as Ground Penetrating Radars (GPR) of 500 MHz frequency designed and developed at Space applications Centre and 1000 MHz frequency, Differential Global Positioning System (DGPS), Spectroradiometer (350-2500 nm), Snowfork, Sunphotometer and Ozonometer for recording velocity of ice, sea ice thickness, radiometric and atmospheric parameters for snow albedo and Melt-Freeze studies.



SAC Scientists onboard ship preparing for sea ice measurements during voyage.



GPR observations on Disintegration glacier with snow cover as seen in GPR profile (inset).



IRS AWiFS data of 14 January 2018 covering fast ice and parts of ice sheet around Bharati station.



IRS LISS-IV data of 06 Feb 2018, showing fast sea ice, icebergs and other features around Bharati station.