

**MEMBER COUNTRY: UKRAINE**  
**National Report to SCAR** For year : 2016

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<b>Standing Scientific Groups</b>						
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Activity	Contact Name	Address	Telephone	Fax	Email	web site
<b>Scientific Research Program</b>						
AAA 1) 2) 3) 4)						
AntEco 1) 2) 3) 4)						
AnT-ERA 1) 2) 3) 4)						
AntClim21 1) 2) 3) 4)						
PAIS 1) 2) 3) 4)						
SERCE 1) 2) 3) 4)						

Activity	Contact Name	Address	Telephone	Fax	Email	web site
<b>Standing Committees</b>						
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<b>Other Groups (optional)</b>						
SOOS						

## Scientific Highlights

### Geological and Geophysical Research

1. Monitoring of parameters of the Earth's geomagnetic field at UAS "Akademik Vernadsky"

The purpose of the work is to ensure the functioning of the “Argentine Islands” Geomagnetic Observatory (AIA), to receive and process geomagnetic data, and to transfer it to the INTERMAGNET for the construction of international models of the Earth's magnetic field.

2. Geophysical monitoring of high-energy natural phenomena in the Antarctic Peninsula region

The purpose of the work is to create a bank of geophysical data for the further study of general seismic activity in the Antarctic region, study of tectonic conditions in the region, observation of global high-energy phenomena, monitoring of iceberg formation processes and monitoring of infrasound phenomena associated with various natural sources.

## **Hydrometeorological Research**

3. Hydrometeorological observations under the program of the World Meteorological Organization, glaciological and ozonometric measurements.

The purpose of the work is to proceed with the series of continuous meteorological observations conducted since 1947 under the program of the World Meteorological Organization (WMO) and which are key in the study of Antarctic climate change and the compilation of operational weather forecasts. Study of the state and dynamics of the stratospheric anomaly of the "ozone hole" which is traced at the station since the 80's of the last century. Study of the impact of climate change on the Antarctic Peninsula on glaciers and snow accumulation in the region.

## **Oceanographic Research**

4. Monitoring of parameters of hydrodynamic, hydrological and hydro chemical fields of the Southern Ocean in the Antarctic Peninsula. The purpose of the work is to obtain data on the state of the Antarctic Hydrosphere, to establish trends in the climate variability of the oceanographic fields of the Southern Ocean, forecast predictors of areas of increased biological productivity and industrial significance.

## **Geospace Research**

5. Investigation of electromagnetic manifestations of geospace and weather disturbances in Antarctica.

The aim of the work is a broadband monitoring of the electromagnetic environment of the Earth in Antarctica, and the reproduction of parameters of space weather disturbances, stimulated by natural space and weather factors, as well as anthropogenic impact.

## **Biological Research**

6. Study of biodiversity of terrestrial and marine ecosystems in the Antarctic region and search for producers of biologically active substances

Comprehensive work, the purpose of which is:

- continuation of ecological and fauna studies of various groups of invertebrates and chordates of ecosystems of water, soil and air and terrestrial habitats with the aim of constructing a complete picture of their species diversity, ecological aspects and adaptive mechanisms to extreme factors;

- continuation of study of bacteriophages in the area of the Argentinean islands that are under extreme conditions (studies will be aimed at characterizing the molecular biological, environmental properties of viruses isolated from Antarctica biocenoses);
- continuation of the study on the search for producers of biologically active substances among the diversity of Antarctic microorganisms (bacteria, yeasts, and micelles), the establishment of their biological characteristics, and the replenishment of a collection of technologically advanced strains of microorganisms by new species (strains) of microorganisms - producers of biologically active compounds;;
- sampling of Antarctic fauna for screening of potential objects for obtaining preparations of proteins and peptides for pharmacological application;

The proposed studies in many areas are either original or initiated in accordance with the multi-year research program since 2007 (invertebrates of freshwater and soil ecosystems, microorganism viruses), and they also continue the ongoing research started by other scientists (phenological studies of birds and mammals).

7. Continuation of monitoring of the status of terrestrial groups in the Argentine Islands.

The purpose of the work is to continue assessing the current status of the terrestrial ecosystems of the Coastal Antarctic, as well as studying the biodiversity and biological activity of the Antarctic terrestrial ecosystems under climate change conditions.

8. Monitoring of krill-dependent predators using ARGOS satellite transmitters and GLS labels, support and development of a network of CEMP cameras in the Antarctic Peninsula region.

The aim of the work is to support and develop a network of CEMP cameras and track the use of krill dependent predators during the winter in subarea 48.1 with the help of ARGOS satellite transmitters and geo-tagging labels installed on penguins in subarea 48.1, in particular, on the territory of the Argentine islands archipelago and Peterman island according to international CEMP projects (“Establishing a CEMP Camera Network in Subarea 48.1” and “Tracking the overwinter habitat use of krill dependent predators from Subarea 48.1”)

## **Medical and Physiological Research**

9. Psychophysiological monitoring of participants of the Antarctic expedition

The purpose of the work is to study the adaptation alterations of the psycho-physiological functions of Antarctic winterers under conditions of a long-term adaptation to extreme conditions and to provide practical recommendations for preventing the development of desynchronous and depressive states during the long professional activity at Akademik Vernadsky station.

The work is a continuation of a long-term research of mental and psycho-physiological functions of a person in the conditions of long expeditionary activity in Antarctica.