SLOVAK ACADEMY OF SCIENCES

The National Academy of Sciences of Ukraine

SLOVAK ACADEMY OF SCIENCES (SAS) -
NATIONAL ACADEMY OF SCIENCES OF UKRAINE (NASU)

APPLICATION

FOR UKRAINIAN- SLOVAK JOINT RESEARCH PROJECT
FOR THE PERIOD 2017-2019

Project title: Low-frequency fluctuations of the geomagnetic field and their bioresponse effects in case of water characteristics, luminescent bacteria and yeast granules

Slovak side:	**Ukrainian side:**
Institute: Earth Science Institute of the Slovak Academy of Sciences **Postal code and address:** Dúbravská cesta 9, P.O. Box 106, 840 05 Bratislava, Slovakia	**Institute:** Zabolotny Institute of Microbiology and Virology of the National Academy of Sciences of Ukraine **Postal code and address:** D 03680 Academician Zabolotny str., 154 Kyev Ukraine
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List of executor of the project: Váczyová Magdaléna, PhD. Valach Fridrich, PhD. Podhorský Dušan, Prof., DrSc.	**List of executor of the project:** Gromozova O.M., DrSci. Sapsay V.I., PhD. Demidova O.I., young scientist Voychuk S.I., PhD.

Start date: 2017	**Term: 2017-2019**

ANNOTATION:

Short description and purpose of the project:

The purposes and their description are defined on the basis of preliminary discussions of scientists of SR and Ukraine who use the experience of the former cooperation on the interdisciplinary problems. The project planned is intended to focus on following tasks:
acquisition of observational data on the geomagnetic field (GMF) low-frequency variations (frequency range of ≤1 Hz) at the Hurbanovo Geomagnetic Observatory
modification of the software developed for the amplitude-frequency analysis of data collected and estimation of correlation relationships between parameters studied and GMF low-frequency variations
identification of interaction processes studied using the comparative analysis of data obtained
proposition of possible mechanisms of bioactivity of the GMF low-frequency variations that being as an environmental factor the significance of which is going to be assessed

The main goal of the project is to study relationships between the geomagnetic field low-frequency variations, presented as an environmental factor, and dynamics of water characteristics, luminescent bacteria and yeast granules, that being a signature of the bioresponse investigated.

Scientific field: interdisciplinary field - geophysics, biophysics, medical sciences

Expected results:

The expected results can be summarized as follows:
unification of the database on the GMF low-frequency variations within the range of ≤1 Hz

optimisation of methodical approaches of the registration and processing of data

modification of the algorithms to the more accurate amplitude-frequency analysis of data investigated

identification of peculiarities of interrelations studied, namely for parameters of water, luminescent bacteria, and yeast granules for conditions of the varying GMF low-frequency background

consideration and proposition of plausible mechanisms of the influence of the geomagnetic field low-frequency fluctuations, those being as an environmental factor for processes in the biosphere

The understanding of such interdisciplinary problems is important not only from the scientific point of view, but also for application aims.

Plan of the scientific exchanges (for each year of the project duration):

A) Slovak institution (mobility from SAS to NASU)	
Number of planned trips (Total):	.....6.....
Thereof: For the year one:	2
For the year two:	2
For the year three:	2
Duration of planned stay (Total): Thereof:	.....30.....
For the year one: For	10
the year two: For the year	10
three:	10
B) Ukrainian institution (mobility from NASU to SAS)	
Number of planned trips (Total):	.....9.....
Thereof: For the year one:	3
For the year two:	3
For the year three:	3
Duration of planned stay (Total):	45
Thereof: For the year one:	15
For the year two:	15
For the year three:	15

SIGNATURES AND SEALS

Slovak side:	**Ukrainian side:**
Project leader: Dr.MagdalénaVáczyová	**Project leader:** Prof. Yuriy P. Gorgo
Director: Dr.BroskaIgor, DrSc	**Director:** Academic V. S. Pidgorsky
Date: 29.9.2016	**Date:** 26.09.2016