

A new European structural funds research project on high-energy physics in atmosphere has started in the Czech Republic

Prague, 3 February, 2017: The first meeting of the international Scientific Advisory Committee (SAC) of the project CRREAT - “Research Center of Cosmic Rays and Radiation Events in the Atmosphere” took place in Řež and Prague on 1-3 February 2017.

The project CRREAT started in December 2016 within the structural funds Operational Programme Research, Development and Education (Strengthening capacity for high-quality research). The EU promotes enhancing research and innovation (R&I) teams, infrastructure and capacity to develop R&I excellence, and promotes establishment of new centers of competence, in particular those of European interest.

The project is led by the Nuclear Physics Institute (NPI) of the Czech Academy of Sciences (CAS) and gathers research groups from partner organizations, the Institute of Atmospheric Physics of the CAS and the Faculty of Electrical Engineering of the Czech Technical University in Prague. The project is gathering around a key international scientist, the project director, who in this case is Karel Kudela (Slovakia), seconded by his deputy Ondřej Ploc (NPI).

The SAC, composed of international scientists from seven countries, will oversee the overall direction of the project and partial R&D activities. Its members will provide feedback on the project's objectives and its interim results, especially with regard to the latest trends in international research.

The project is focused on

- Deepening knowledge about the relation between the atmospheric phenomena and ionizing radiation (IR);
- Clarifying phenomena causing variations of the secondary cosmic rays (CR) in the atmosphere.

The next meeting of the SAC overlooking the first project results will take place in the Czech Republic at the end of the year 2017.



Project and SAC members in Prague near the building of Department of radiation dosimetry of Nuclear Physics Institute of the Czech Academy of Sciences



Project research objectives to a great extent coincide with ongoing research on Aragats mountain performed by physicists of Cosmic Ray Division (CRD) of Yerevan Physics Institute. CRD physicist last years in all details investigate new physical phenomenon, named TGE – thunderstorm ground enhancements, i.e. intense fluxes of electrons, gamma rays and neutrons originated in the thunderstorm atmospheres. The first results on the relationship between the storm activity and TGE, on lightning initiation process obtained by CRD physicists in 2016 are now prepared for publication in the proceedings of annual symposia “Thunderstorms and elementary particle acceleration” (TEPA 2016).

After the SAC meeting, a special session was devoted to the SEVAN particle detector network operated in Eastern European countries developed by CRD in the framework of UN program during international heliophysical year 2007. One of the projects outcomes of CRREAT would be to become a node of the SEVAN network. As Armenia is now eligible to participate in the Horizon 2020, the project CRREAT opens new areas of cooperation.