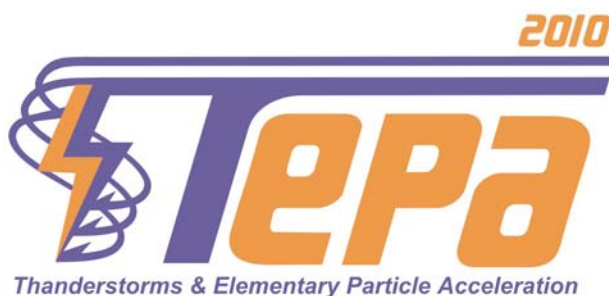




**Second Circular**

**Symposium**

**Thunderstorms and Elementary Particle Acceleration (TEPA-2010)**



**GENERAL INFORMATION:**

**DATES:** 6-11 September 2010

**LOCATION:** Nor Amberd International Conference Centre of Alikhanyan Physics Institute,  
Byurakan, Aragatsotn District, Armenia

<http://crd.yerphi.am/Conferences/tepa2010/home>

**ORGANIZERS:**

Cosmic Ray Division of Alikhanyan Physics Institute, Armenia

Skobeltsyn Institute of Nuclear Physics of Moscow State University, Russia

**INTERNATIONAL ADVISORY COMMITTEE:**

*Leonid Babich, Russian Federal Nuclear Center-VNIIEF, Russia*

*Hans-Dieter Betz, Munich University, Germany*

*Karen Buniatov, ISTC, Moscow office*

*Ashot Chilingarian, Alikhanyan Physics Institute, Armenia, co-chair*

*Norma Crosby, Belgian Institute for Space Aeronomy, Belgium*

*Lev Dorman, Israel Cosmic Ray Center and Emilio Segre' Observatory, Israel*

*Joe Dwyer, Florida Institute of Technology, USA*

*Hartmut Gemmeke, Karlsruhe Institute of Technology, Germany*

*Andreas Haungs, spokesman of KASCADE and LOFAR*

*Boris Khrenov, Moscow State University, Russia,*

*Karel Kudela, Institute of Experimental Physics, Slovakia*

*Alexandr Lidvanski, Nuclear Physics Institute, Russian Academy of Science, Russia*

*Jean Lilensten, Laboratory of Planetology, Grenoble, France*

*Michail Panasyuk, Moscow State University, Russia, co-chair*

*Yuri Stozhkov, Lebedev Institute, Russian Academy of Science, Russia*

*Il Park, EWha University, Seoul, Korea*

## **BACKGROUND:**

Studying Energetic Atmospheric Particle Events & Transient Luminous Effects occurring in Earth's lower and upper atmosphere, as well as in space, is important for several reasons:

- *It provides unique information about particle acceleration and multiplication in the lower atmosphere during thunderstorms;*
- *Generation and propagation of huge fluxes of electrons, positrons, gammas and neutrons near the Earth's surface are newly discovered global processes that should be studied by experimental and theoretical methods;*
- *Electromagnetic emissions connected with thunderstorms trigger various dynamic processes in the Earth's magnetosphere, causing global geo-effects and changing electrodynamic properties of the ionosphere.*
- *The huge values of energy associated with electron-photon avalanches and upper atmospheric discharges can potentially be a real danger for high – altitude flights.*

## **GOALS AND STRUCTURE OF THE SYMPOSIUM:**

The aim of the Symposium is two-fold:

1. To organize a large forum for discussing recent observations of enhanced particle fluxes in the atmosphere;
2. To discuss possible directions for the advancement in research, and for international cooperation between scientific groups using different experimental methods.

Based on these goals the following topics will be covered:

- *Surface measurements of electrons, neutrons and gammas in correlation with thunderstorms;*
- *Energy spectra of electrons and gammas from the ascending relativistic runaway electron (RREA) process;*
- *Terrestrial gamma-ray flashes (TGFs) observed by gamma-ray observatories in-orbit;*
- *Broadband electromagnetic signals detection from thunderstorms;*
- *Transient luminous effects of thunderstorms and lightning in the upper atmosphere;*
- *Runaway breakdown and relativistic positron/gamma-ray feedback;*
- *Timing and positioning of lightning by networks of VLF antennas;*
- *Connections with space weather issues;*
- *Joint observations by space-born and ground-based facilities.*

## **LIST OF INVITED SPEAKERS:**

The list of invited speakers will appear on the Symposium website after the distribution of the third circular.

## **ATTENDANCE LIMITATION:**

Due to the size of the venue and other restrictions, the number of participants will be limited to 75. Therefore, participation in the Symposium is by invitation only.

## **ABSTRACT SUBMISSION:**

The Symposium will consist of invited and contributed (mostly posters) presentations. Contributed presentations will be selected from the submitted abstracts after their evaluation by members of the

International Advisory Committee. Abstracts should be submitted electronically on the Symposium website. The deadline for abstract submission is 1 June 2010.

### **REGISTRATION:**

Registration to **TEPA 2010** is to be done online via the Symposium website.

In the near future, we will provide participants with their own account on our Symposium website. These accounts will serve for the submission of abstracts, papers for Symposium proceedings and for providing additional information about accompanying persons, conference dinner and so on.

Registration fees:

- Regular Attendees [ 250 Euro ]
- Undergraduate and Graduate Students [ 100 Euro ]

The fee covers the cost of transportation from and to airport, coffee breaks, as well as the Reception and the Banquet, and an excursion to the Aragats research station of Yerevan Physics Institute. Payment of the registration fee will be accepted at the Symposium desk upon arrival.

For those requiring an invitation letter please visit the "Travel Info" link on the Symposium website.

### **CONFERENCE DEADLINES:**

- |                  |  |
|------------------|--|
| - 1 June 2010    | Abstract submission deadline                                 |
| - 15 June 2010   | Contributed presentations selected and participants notified |
| - 15 August 2010 | Symposium program details                                    |

### **TRANSPORTATION AND LODGING:**

Transportation from/to the Yerevan Airport "Zvartnots" will be provided by the organizers. Information on the arrival date, time and flight number should be sent to the Local Organizing Committee.

During the Symposium the participants will be accommodated at the Nor Amberd hotel. Nor Amberd International Conference Center of Alikhanyan Physics Institute is located on the slopes of Mount Aragats near the village of Byurakan, Aragatsotn District, Armenia. The Center has a rich tradition of hosting high energy physics schools and is well equipped for international forums.

### **CORRESPONDENCE:**

Chilingarian Ashot  
Yerevan Physics Institute  
2 Alikhanyan Brothers st.  
Yerevan 0036, Armenia

Phone: 374-10-352041; 37410-359000 (Nor Amberd)

FAX: 37410-352041

Email: [anna\\_alaverdyan@yerphi.am](mailto:anna_alaverdyan@yerphi.am)