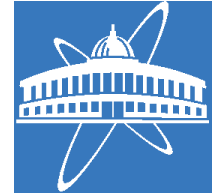




# Communiqué

By the participants of the ASPERA Town Meeting

Held at the Joint Institute of Nuclear Research (JINR) in Dubna, Russia



On September 14, 2012, more than 50 scientists and representatives of funding agencies came together for a one day ASPERA Town Meeting at the Joint Institute of Nuclear Research (JINR) in Dubna, Russia. To represent Russia, the Russian Foundation for Basic Research joined the European network of funding agencies in Astroparticle Physics (ASPERA) last year. Consequently, the main purpose of the meeting was to present the current Astroparticle Physics (ApP) programs in Russia and Europe, to identify areas of common interest, and start discussing the strategy of future common activities. Representatives of the French, German, and Italian embassies in Moscow have been present during the meeting.

For this meeting all major Russian stakeholders in ApP came together at the JINR. Members of ASPERA informed their Russian colleagues about the current status of the creation of ApPEC, the Astroparticle Physics European Consortium, which shall form a sustainable structure carrying further the coordinating work of ASPERA. It was agreed that JINR should become an observer in ApPEC, a status similar to other European organizations like CERN, ESA, and ESO. Furthermore, a Russian organization should become a partner of ApPEC. A discussion among all relevant stakeholders providing funding for ApP or involved in policy making in Russia shall initiate a decision.

Both sides confirmed the fostering of common research projects, the growing importance of an interdisciplinary linking of ApP activities, the relations to industry, and the necessity to attract young scientists and the training in this science topic.

The numerous scientific presentations given during the ASPERA Town Meeting by European and Russian scientists reviewed the state of the art in ApP in Russia and Europe. Among all ApP activities going on in Russia and at JINR the unique research opportunities provided by the Russian facilities BAIKAL and BAKSAN have been mentioned.

BAIKAL has provided pioneering results along the road towards high-energy neutrino astronomy. The participants of the meeting highly acknowledged the preparatory work of the BAIKAL Collaboration towards construction of a Gigaton-scale detector (GVD) and the plan to integrate it in a future Global Neutrino Observatory (GNO formed by the IceCube, KM3NeT, and BAIKAL infrastructures).

In the field of solar neutrino physics the SAGE detector in the BAKSAN Laboratory is presently the only detector worldwide which measures pp neutrinos from the Sun. There are also very important plans for using the Ga-Ge detection technique at BAKSAN to confirm recent indications for sterile neutrinos. With respect to the BAKSAN plans for a large liquid scintillation detector, the participants of the meeting encouraged Russian scientists to continue with these activities and bring in the results of their efforts in the realization of the best scintillator and high-sensitive photo-detectors. Results could be implemented into a world-wide neutrino infrastructure currently discussed under the label of LAGUNA-LBNO. A considerable funding support of these efforts in Russia is essential.

Participants of the meeting also noted the high level of Cosmic Ray studies performed in Russia, which may open interesting opportunities for an extension of the Pierre Auger Observatory in Argentina and also for a new, very large cosmic ray observatory in the northern hemisphere. The project TUNKA appears of significant interest for international collaborators. At present, Germany and Italy are foreign partners. Quite recently, Russian and German researchers have installed in the Tunka valley the first modules of HiSCORE, an extensive air shower array for gamma ray astronomy, which shall complement the European-led Cherenkov Telescope Array (CTA) at higher gamma energies. Participants also noted the high standing of satellite-based research in Russia, with emphasis of collaboration within the JEM-EUSO project.

Following a long standing tradition, a talk on advanced theoretical physics confirmed the high level of theoretical work in ApP and cosmology in Russia.

The participants of the meeting were pleased by the high level of ApP research in Russia. In addition to the Russian based facilities the contributions of Russian Institutes and JINR to the international experiments and programs and in particular their participation to direct dark matter searches and neutrino-less double beta decay experiments in the underground laboratories in Italy (LNGS) and France (LSM) as well as the Daya Bay program in China are important to note.

The plans of Russian Institutes and JINR in reactor and long baseline neutrino physics are very impressive. Further development of the neutrino laboratory at Kalinin Power Plant as well as elaboration of the program at research reactors will provide the basis for studying the neutrino properties of fundamental and applied nature. The participants of the meeting confirmed the international importance of these plans of the Russian Institutes and JINR.

It was a commonly expressed view of all participants of the meeting that the common applications to the third ASPERA common call focusing on R&D for a detector for solar and geo-neutrinos, proton decay, and beam-related neutrino physics as well as a future global gravitational wave observatory (Einstein Telescope) shall define a first and important step towards implementation of a common roadmap in Europe and Russia.

In general, the European community, represented in Dubna by the ASPERA leaders and participants, recognizes the importance of efforts of Russian colleagues in the development of a Russian strategy in ApP and preparation of a Russian roadmap.

As result of the ASPERA Town meeting in Dubna it has been agreed to set up three working groups to

1. formalize the relationship on agency level that a Russian partner joins ApPEC and JINR receives observer status,
2. define a common action plan for the study of rare processes underground and underwater in neutrino physics and direct dark matter searches, and
3. elaborate a fostering of collaboration between Russian and European scientists and institutions in studying the high-energy universe (cosmic rays, high-energy gamma rays, neutrinos, and gravitational waves).

Co-chairmen of the meeting:

T. Berghöfer

V. Matveev