Bulgarian Academy of Sciences
Institute for Nuclear Research and Nuclear Energy
40 years 1972 - 2012
Laboratory “Theory of Elementary Particles”

Laboratory “TEP” on the International Science Landscape

Laboratory “Theory of Elementary Particles” (Laboratory “TEP” for short) was founded in the beginning of 1970-ies by Prof. Ivan Todorov (full member of Bulgarian Academy of Sciences (BAS)) as an integral unit within the “Nuclear and Elementary Particle Theory Division” headed by Prof. Hristo Hristov (full member of BAS) – the founding Director of the Institute for Nuclear Research and Nuclear Energy (INRNE). For an extended period of time a deputy-head of Laboratory “TEP” was Prof. Dimitar Stoyanov (corresponding member of BAS). Among the other senior members of the Laboratory are Prof. Trchava Palev (full member of BAS) and Prof. Valentina Petkova (corresponding member of BAS).

Already from the start the staff of Laboratory “TEP” engaged in an exceptionally active research in practically all “hot” areas of the theory and phenomenology of fundamental elementary particle interactions at high and ultra-high energies. The Laboratory has been playing a crucial role in the forefront of gravity research and cosmology. The scientific research of Laboratory “TEP” is conducted in the framework of intensive collaboration with various world renown academic institutions such as:

(a) International centers – Joint Institute of Nuclear Research (Dubna, Russia); CERN (Geneva, Switzerland); ICTP and SISSA (Trieste, Italy); Erwin Schrödinger International Institute for Mathematical Physics (Vienna, Austria);

(b) National centers – Armenia (Physics Institute of Armenian Academy of Sciences, Erevan); Austria (Institute of High Energy Physics, Vienna University); Belgium (Ghent University); Brazil (Instituto de Física Teórica, São Paulo, University Federal do Espirito Santo, Vitória, Brazil); France (C.E.A. Saclay (Gif-sur-Yvette), Institut des Hautes Etudes Scientifiques (Bures-sur-Yvette); Université de Paris-Sud (Orsay), Ecole Polytechnique (Palaiseau), L.A.P.P. (Annecy); Université Paul Sabatier (Toulouse); Université Henri Poincaré (Nancy); Institut de Recherche Mathematique Avançée CNRS et Universität de Strasbourg; Centre de Physique Théorique (Marseille)); Hungary (K.F.K.I., Budapest); Germany (DESY Hamburg, Institut für Theoretische Physik der Universität Göttingen, Technische Universität Clausthal, Max-Planck Institut für Mathematik (Leipzig), Institut für Theoretische Physik der Justus-Liebig-Universität (Giessen), Institut für Theoretische Physik der Universität Hamburg, Albert-Ludwigs-Universität Freiburg), Greece (University of Patras); Ireland (Dublin Institute of Technology); Israel (Weizmann Institute of Science (Rehovot), Hebrew University (Jerusalem), Ben-Gurion University (Beer-Sheva)); Italy (Trieste University, Universita di Roma II “Tor Vergata”, INFN); Japan (Osaka Prefecture University); Korea (Ewha University, Seoul); Russia (Mathematical Institute of Russian Academy of Sciences (St.Petersburg, Moscow), Physics Institute of Russian Academy of Sciences (Moscow); Institute of Theoretical Physics (Chernogolovka)); Switzerland (University of Geneva); United Kingdom (Imperial College and Kings College (London), University of York, University of Northumbria at Newcastle); Ukraine (National Polytechnical University (Odesa), National Antarctic Center (Kiev)); USA (Institute of Advanced Studies (Princeton, NJ), MIT (Cambridge, MA), University of Illinois at Chicago, Virginia Polytechnic Institute and State University (Blacksburg, Virginia), Pennsylvania State University (Abington), CLASS12 Collaboration at Jefferson Laboratory (Newport News, VA), University of Massachusetts (Amherst), University of Delaware (Newark); Michigan University (Ann Arbor), North Carolina State University (Raleigh). (b) National centers

International Grants and Organizing Conferences

Significant number of members of the Laboratory have participated in large international projects and research networks financed by the EC within the 5th, 6th and 7th framework program:

(a) FP5 Research Training Network “EUCLID” HPRN-CT-2002-00325;

(b) “Constituents, Fundamental Forces and Symmetries of the Universe” – FP6 Marie Curie Actions, Research Training Network, Project MRTN-CT-2004-0005;

(c) “Tools and Precision Calculations for Physics Discoveries at Colliders” – FP6 Marie Curie Research Training Network, HEP4Tools, MRTN-CT-2006-03550;

(d) TMD network “Mapping out the Transverse Structure of the Nucleon” of the FP7 Hadron Physics2 Project;

(e) EU 7th Framework “Partnership for Advanced Computing in Europe” (PRACE AISBL) - projects RI-261557 and RI-283493.

Members of Laboratory “TEP” are the core organizers of numerous prestigious international conferences such as the Annual Workshops of the EC Research Training Networks “EUCLID” (2004) and “Forces-Universal” (2008), as well as the series of international workshops “Lie Theory and its Applications” (Varna – 2003, 2005, 2007, 2009, 2011).