



CGSWHP'10 (May 3 – 7), Tbilisi, Georgia
4th „Georgian – German School and Workshop in Basic Science“

Topics:

**EXISTING AND FUTURE HADRON PHYSICS PROJECTS AT COSY AND FAIR
(EXPERIMENT, THEORY)**

HADRON PHYSICS WITH POLARIZED ANTIPROTONS (SPIN-FILTERING)

DESIGN AND ENGINEERING FOR UPCOMING PROJECTS (HESR, PANDA, PAX)

PROJECTS IN MATERIAL SCIENCE

PROJECTS IN ATMOSPHERIC CHEMISTRY

INFORMATION TECHNOLOGY AND ADVANCED COMPUTING

EDUCATION OF FUTURE SCIENTIFIC AND ENGINEERING PERSONNEL

May 3, Monday (MUZA): 13⁰⁰ - 17⁰⁰

Location: Kus Tba Road, Tbilisi. M. Berdzenishvili International Center of Culture “MUZA”.

Existing Cooperation and Hadron Physics Project

13⁰⁰ – 13³⁰ Welcome Address:

- Georgian Minister – Dimitri Shashkini
- German Ambassador (Deputy) – Heike Gabriel
- Vice-Rector of TSU – Irine Darchia
- Rector of GTU – Archil Prangishvili

Ceremony session for signature:

- MoU between FZJ GmbH and Georgian Partner Institutions (TSU, GTU)
- Extension of Cooperation Agreement between IKP-FZJ and HEPI TSU

13³⁰ – 17⁰⁰ General Information:

- Hans Ströher (FZJ) – Scope of the Workshop
- Hans Ströher (FZJ) – Hadron Physics in Germany and Europe (COSY, FAIR)
- Rudolf Maier (FZJ) – The FAIR Project at GSI-Darmstadt (Accelerator part)

15⁰⁰ – 15³⁰ Coffee Break

- Frank Rathmann (FZJ) – The Quests for Polarized Antiprotons (PAX)

- Elena Abrosimova (FZJ) – Research and Career Opportunities at FZJ
- Andro Kacharava (FZJ) – Georgians at FZJ: Existing Collaborations

17⁰⁰ – 19⁰⁰ Reception by Universities

19⁰⁰ – 21⁰⁰ Social program (concert at MUZA)

May 4, Tuesday (TSU) 10⁰⁰ - 18³⁰

Location: 3. Chavchavadze Ave., Tbilisi. TSU, Building II.

Future Cooperation and Academic Training

- Welcome Address – Vice-Rector of TSU Irine Darchia
- Introduction to the Faculty of Exact and Natural Science – Dean, Ramaz Botchorishvili

Awarding ceremony of Doctor Honoris Causa Prof. Dr. Hans Ströher

10³⁰ - 12⁰⁰ Hadron Physics Project – From COSY to FAIR

- Hans Ströher (FZJ/Cologne Uni) – The Need for Basic Science
- Frank Rathmann (FZJ/Erlangen Uni) – How to Polarize Antiprotons?
- David Chiladze (FZJ/HEPI TSU) – Instrumentation and Tools at COSY
- Irakli Keshelashvili (HEPI TSU/Basel Uni) – Experiments at ELSA (Bonn) and MAMI (Mainz) Electron Accelerators

12⁰⁰ – 12³⁰ Coffee Break

12³⁰ – 13³⁰ Field of the Atmospheric Chemistry

- Hendrik Elbern (FZJ/Cologne Uni) – Inverse Problems in Atmospheric Data Assimilation
- Ramaz Botchorishvili (TSU) – Numerical Models for Atmospheric Simulations

13³⁰ – 14³⁰ Lunch Break

14³⁰ - 15³⁰ Future collaborators: The New Partners

- Alexander Shengelaya (TSU) – Study of Novel Superconducting and Magnetic Materials using Muon Spin Rotation Technique
- Alexander Gamkrelidze (TSU) – Trends in Computer Science at TSU: Elementary Problems for Our Viewpoint

15³⁰ – 17⁰⁰ Invited Lectures

- Markus Büscher (FZJ/Cologne Uni) – Laser Technology in Particle Physics
- Detlev Gotta (FZJ/Cologne Uni) – Exotic Atoms

17⁰⁰ – 17³⁰ Coffee Break

17³⁰ – 18³⁰ Students Activity:

- Andria Agadjanov, Dimtri Agadjanov – Self-adjoint extension of the operators in quantum mechanics and its classical interpretation

- Zara Bagdasarian – CTA design study
- Arnol Shakhbatian – Grid cluster at the Institute of High Energy Physics.

19⁰⁰ – 22⁰⁰ Social program

May 5, Wednesday 9⁰⁰ – 20⁰⁰ Social Program (Excursion)

May 6, Thursday (GTU) 10⁰⁰ - 19⁰⁰

Location: 77, Kostava Str., Tbilis. GTU Administrative Building

Future Cooperation and Academic Training

- Welcome Address – Rector of GTU, Archil Prangishvili
- International Relationships of GTU: Past, Present, Future – Otar Zumburidze

10³⁰-13³⁰ Cooperation Partners from Germany (FZJ):

- Hans Ströher (FZJ/Cologne Uni) – Introduction to Research Center Jülich (IKP)
- Günter Hansen (FZJ) – Central Technology Division (ZAT)
- Andreas Wahner (FZJ/Cologne Uni) – Institute of Chemistry and Dynamics of Geosphere (ICG-2)

12⁰⁰ – 12³⁰ Coffee Break

- Torsten Markus (FZJ/RWTH) – Institute of Energy Research (IEF-2)
- Christoph Hanhart (FZJ/Bonn Uni) – Highlights and Challenges of Hadron Physics (IKP-Theory, Invited Lecture)

13³⁰ – 14³⁰ Lunch Break

14³⁰ – 17⁰⁰ Cooperation Partners from Georgia:

- David Tavkhelidze (GTU) – State of research and scientific works at GTU
- Elguja Kutelia (GTU) – Past, Present and Future of the Republic Center Structure Researches
- Olga Tsurtsunia (GTU) – Degradation of the Materials Used in the Energetic Systems and the Ways to Prolong Their Operation Time
- Zviad Kovziridze (GTU) – Composite Materials And Products Technology
- Vahtang Beridze (GTU) – Amino Acid Based Biodegradable Polymers – Promising Materials for Numerous Biomedical Applications
- Giorgi Kvesitadze (GTU) – Biotechnological Developments in Georgia

17⁰⁰ – 17³⁰ Coffee Break

17³⁰ – 18⁰⁰ Students Activity:

- Konstantin Magradze (GTU) – Maser's Program: Students Participation in Professional Development
- Lili Nadaraia (GTU) – Development and Investigation Of Nanocrystalline Composite Materials

18⁰⁰ – 19¹⁵ Visits/Sightseeing of Various Partner Institutions:

- Institute of Structures, Special Systems and Engineering Support of GTU

19³⁰ – 23⁰⁰ Social program (Banquet of Workshop)

May 7, Friday (MUZA) 10⁰⁰ - 13⁰⁰

Location: Kus Tba Road, Tbilisi. M. Berdzenishvili International Center of Culture “MUZA”.

Strategy Discussion

Exchange Programs:

- Status of Georgian – German (GG) Collaborations (examples) – A. Kacharava
- Development of GG Cooperation:
 - Sommer Schools (Physics, Bad-Honnef 2010)
 - Schemes (Joint PhD programs) with other countries – E. Abrosimova
 - Concept of Virtual Institute (GGVIBS) – H. Ströher
 - Views from TSU – I. Darchia
 - Views from GTU – D. Tavkheldze
- Organizational Issues (contact persons)
 - GNSF (representative)
 - DAAD (representative)
 - FZJ (E. Abrosimova)
 - TSU (representatives)
 - GTU (representatives)
 - Andronikashvili Physics Institute (representatives)
- Next Steps, Milestones

Concluding remarks:

- Germany – Hans Ströher
- Georgia – Ramaz Botchorishvili / Elguja Kutelia

13⁰⁰ – 14⁰⁰ Lunch Break

End of Workshop

19⁰⁰ – 21⁰⁰ Social Program (concert)