

# **PARTICLE PHYSICS STRATEGY OF**



# RESPONSIBLE INSTITUTE



## TURKISH ATOMIC ENERGY AUTHORITY

- Conduct all the necessary administrative, monetary and technical aspects of Turkey-CERN relations, including full membership of Turkey to CERN.
- **Organize research groups of the country in relation to their activities at CERN and other labs.**
- Facilitate and monitor development of requisite technologies to enhance nation's contribution to CERN experiments.



# TAEK'S POLICY AND GOALS

- Forming strong ties with EU laboratories and research institutes for exchanging knowledge, technology and researchers.
- Supporting education and training of young researchers in related fields.
- Promoting R&D in particle and nuclear physics and related detector technologies.
- Constructing accelerator facilities for research, technology development, and applications.
- Improving participation and contribution in hardware and software studies in present and future accelerator facilities.
- Constructing requisite facilities for taking part in GRID projects

# HEP-EX, HEP-PH, NUCL-EX GROUPS



# PRESENT RESEARCH AREAS AND GROUPS

## **HEP-EX:**

- CMS (Bogazici, Cukurova, METU)
- ATLAS (Ankara, Bogazici)
- CAST (Dogus)
- CHORUS (Bogazici, Cukurova, METU)
- SELEX (Bogazici)
- OPERA (METU)

## **ACCELERATOR PHYSICS:**

- TAC (Ankara, Gazi, Bogazici, Istanbul, Uludag, Dumlupinar, Erciyes, Nigde, S. Demirel)
- CLIC (Ankara, Bogazici, Gazi, TAEK)

# PRESENT RESEARCH AREAS AND GROUPS

## **HEP-PH:**

- Supersymmetry
- Extra Dimensions
- Compositeness
- Fourth Family
- Flavor Physics and CP violation
- Neutrinos
- Hadronic Physics
- Higgs Physics
- Dark Matter/Energy
- $Z'$  and  $W'$  Physics

**(plus a number of researchers in HEP-TH)**

# PRESENT RESEARCH AREAS AND GROUPS

## **ASTRO-PH:**

(Akdeniz, Bogazici, Canakkale, Cukurova,  
Ege, IZTECH, METU, Sabanci)

**(plus a number of researchers in GR-QC, HEP-TH)**

## **NUCL-EX:**

**Yale University – WNSL Collaboration (Istanbul, Nigde)**  
**iThemba LABS (Istanbul, Nigde)**

**(plus a number of researchers in NUCL-TH)**

# RESEARCH EMPHASIS

- Research groups strongly emphasize the importance of experiments and R&D at the LHC, and have been involved in ATLAS and CMS experiments.
- Research groups are strongly interested in GRID Computing and Open Science GRID projects.
- Nuclear Physics groups have strong interest in CMS Heavy Ion programme, ALICE and ISOLDE experiments.
- Accelerator Physics groups are working on a national facility called Turkish Accelerator Complex (TAC).
- Research groups strongly emphasize the importance of next generation colliders like ILC, QCD Explorer, Neutrino Factory, Super-B and Charm Factories.



# COLLABORATION EMPHASIS

- Research groups emphasize the fact that CERN will continue to be a centre for excellence in high energy physics, innovation general, and advanced technologies central to information society.
- **Research groups nationwide wish CERN to increase number and diversity of visiting and exchange programmes in high energy physics and related areas.**
- Research groups emphasize the importance of frequent and regular training and education programmes for young researchers.

