

High Energy Physics
at the
University of Texas at
Arlington

U.S. Department of Energy
Site visit 11/13-14/01
Dr. Michael Procaro

Ten years of High Energy Physics at UTA

- ☆ Group started research in Fall 1991
- ☆ Highly active participation in D0 since 1986
- ☆ Increasing involvement in ATLAS since 1994
- ☆ Contributing to PP2PP Experiment (BNL)

Goal

Keep the UTA HEP Group on the leading edge of high energy research by full participation (detector construction, software, physics analysis) in highest energy collider experiments

UTA High Energy Physics

Faculty: Dr. Andrew Brandt, Dr. Kaushik De,
Dr. Andrew White, Dr. Jaehoon Yu

Postdocs: Dr. Jia Li, Dr. Mark Sosebee,
Dr. Nurcan Ozturk, Dr. Armen Vartapetian,
Dr. Tom Wlodek, Dr. Christophe Royon,
Dr. Pierrick Hanlet

Graduate Students: Ted Eltzroth, Mike Strang,
Yan Song, Barry Spurlock, Fajer Jaafari,
Nevzat Guler, Tom Lytle

Technicians: Victor Reece, Lionel Peyrichoux
Secretary: Dayla Morrison

+ many undergraduates and Engineering students

Introduction to HEP Research at UTA

★ D0 Experiment

Physics

Searches for Supersymmetry, Leptoquarks, Higgs
Diffractive physics, rapidity gaps, extra
dimensions, QCD

Detector

Intercryostat Detector (ICD) A.White, Manager
- upgrade system now complete, ready for data

Forward Proton Detector (FPD) A. Brandt Manager
- partially installed, ready for data

Software, Computing, and Networking

Remote Computing/Analysis – Jae Yu
- new appointment, offsite coordination
- UTA analysis system – Mark Sosebee
Monte Carlo Farm – Tom Wlodek

★ ATLAS Experiment

Detector

Intermediate Tile Calorimeter – K. De, Manager

- construction of 128 modules nearly complete
- Photomultiplier testing
-

Computing/Networking

Tier 2 test site for ATLAS GRID – K. De, J. Yu

- development of GRID tools

Physics

Heavy Squark states separation study – A. White
(with M. Barnett, LBL)

Sbottom at LHC – R. Pravahan

★ PP2PP Experiment

Roman pot construction – K. De

Silicon readout system – N. Guler

Trigger counters – J. Li

☆ Next Linear Collider

R+D Review Committee – A. White (3 year term)

Digital Hadron Calorimeter proposal – J. Yu
(with Northern Illinois University)

Education and Outreach

★ Quarknet

Third year of Summer Workshop at UTA

- 14 teachers from local area
- one week of lectures, hands on detector activities
- classroom visits by UTA HEP faculty
- visits to UTA by juniors/seniors
- joint HEP/Astrophysics workshop in 2002

★ Prague Summer School

Third summer school in 2001

- 24 students
- faculty from HEP, psychology, architecture
- exchange program for students and faculty
- ten-year agreement with Charles University

HEP Facilities

★ Swift Center

- 10,000 sq.ft. detector assembly laboratory (ATLAS, D0 and PP2PP work)
- mechanical workshop
- clean room
- mechanical workshop
- Monte Carlo farm
- Computing lab. area

★ Science Hall

- HEP Office area
- photomultiplier laboratory
- mechanical workshop

★ New Physics Research Building

- Funding approved by Board of Regents
- New HEP area adjacent to new workshop