The DESY ATLAS Group

The Group

|	Hamburg	Zeuthen	
1 Juniorprofessor	7 Staff	4 Staff	3 Professors
2 Postdocs	1 YIG	1 YIG	5 Postdocs
3 PhD students paid by SFB	10 Postdocs	1 Postdoc	4 PhD
	8 PhD	5 PhD	

Staff partly working for HERA
Close collaboration with IT/DV
Support from engineers and workshops

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Uni HH group fully integrated in DESY group	Common diploma students
Common diploma students	Common projects: Trigger monitoring, physics, pixels
DESY staff teaching at Uni HH	Common DFG research training group (Graduiertenkolleg) with Dresden
	DESY Staff teaching at HUB

and
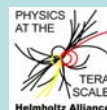
- Group members work in analysis center and help in alliance schools
- Strong involvement in the NAF
  - Contributions to the NAF development
  - ATLAS specific NAF software and user support
  - Setup and operation of TAG/Cond DB for German ATLAS user
- Software tutorials for ATLAS-D
- Common projects on Physics, tau-ID, trigger
- SLHC R&D embedded in alliance (Aachen, Bonn, Dortmund, München)
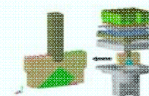- Organization of German outreach events

Physics
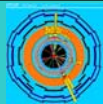
- Top physics
- Search for Supersymmetry
- Standard Model analyses based onHERA experience
- Fits to precision data: extraction of parameters in new physics models
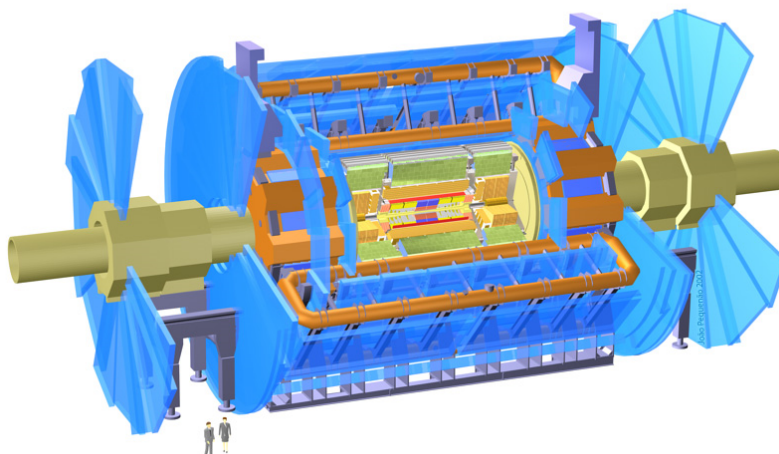
ALFA

- High resolution fiber tracker in Roman pots read out via 64 channel multi-anode PMTs
- Measurement of small angle proton scattering in the Coulomb-nuclear interference region
- Absolute measurement of the luminosity of ATLAS in dedicated high-beta runs
- Calibration of the ATLAS luminosity monitor LUCID

Trigger
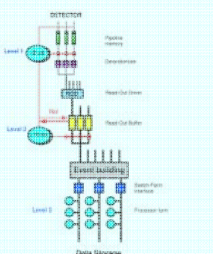
- DESY leads development of Core Software Tools for the Operation of the Trigger
- Central configuration system:
  - Trigger Run Control, TriggerDB, Archive
  - Interfaces for data analysis
  - Tests with local replica at DESY computing centre.
- Central monitoring system:
  - Online tool for all levels
  - Graphical user interface
  - Rate measurements
- Trigger operation strategies

Software & Computing
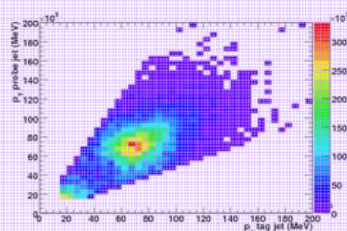
- tau identification
  - tau-selection for 1st data
  - SM analyses to test tau-id
- Monte Carlo
  - MC studies: parton shower, matching and pdfs
  - Responsible for generator interface software
  - Framework for MC generator studies

- Definition of data structures
  - Coordination of implementation and design of data structures/formats for early data analysis
  - Contribution to core software, egamma, tau and top
- Development of algorithms to speed up the ATLAS detector simulation
- Software and user support of German ATLAS groups on the NAF
- Tutorials for ATLAS-D
- Contributions to distributed data management

SLHC upgrade

- Learning phase: operation and studies of current pixel detector
- Comparison of powering concepts: serial powering, DC-DC conversion
- Next steps: R&D on pixel detector system integration, construction
- Service: electron test beam, silicon detector laboratory
- Simulation: finding the optimum ATLAS inner detector design for SLHC under high-luminosity conditions

HELMHOLTZ ASSOCIATION