

Top Physics Activities at DESY/HUB

Marcello Barisonzi

Top Physics in ATLAS

- Top Physics is a stepping stone for understanding the ATLAS detector
- Top Physics WG fastest growing community
- Top Group at DESY formed ~1 year ago
- Main interests: trigger, single top, pair production
- Collaborates through the LHC-D network with other German institutes
- Plans to collaborate with DESY Theory department on the subject of NNLO heavy flavour production

Recent Activities

- Contribution to ATLAS CSC Note on Top Physics Trigger (M.Barisonzi, S.Mehlhase, C.Lange)
- Top-based Monitoring Trigger for evaluating trigger efficiency of data (S.Mehlhase)
- Selection efficiency for Single Top Production at ATLAS (C.Lange)
- Fourth generation Fermions (H.Lacker, R.Mandrysch)
- Physics Analysis Tools (M.Barisonzi, O.Kind)
- First data simulation (FDR) & distributed analysis facility (NAF) (M.Barisonzi, S.Mehlhase)

Strategy for early data

- Training on Full Dress Rehearsal (FDR) Data presents unique opportunity to tune strategy
- FDR: $O(10 \text{ pb}^{-1})$ integrated luminosity with early trigger menus
- Study of trigger efficiency with Monitoring Trigger
- Background studies: W +jets, QCD fakes
- Rough estimates of cross-section: top pair production, single top challenging