

Hadron Collider Physics Symposium 2006

Monday 22 May, 2006 - Friday 26 May, 2006

Duke University
Durham, North Carolina

Scientific Program
Version 1

Monday 22 May 2006

Session 1 – Introduction and Experimental Status

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|---|----------------------|
| 09:00 | 0 | Introduction | |
| 09:10 | 1 | Welcome Address | Dean George McLendon |
| 09:30 | 2 | Tevatron Performance and Perspectives | |
| 10:00 | 3 | LHC Accelerator Status | |
| 10:30 | 4 | ATLAS detector status and commissioning | |
| 11:00 | | Coffee Break | |
| 11:20 | 5 | ALICE detector status and commissioning | |
| 11:45 | 6 | CMS detector status and commissioning | |
| 12:15 | 7 | <u>LHCb detector status and commissioning</u> | |
| 12:40 | | Lunch Break | |

Session 2 – QCD Collider Physics

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|--|------------------|
| 13:40 | 8 | Theoretical Perspectives in QCD | |
| 14:10 | 9 | Diffraction & Total Cross Section @ Tevatron & LHC | |
| 14:40 | 10 | Proton Spin Physics | |
| 15:10 | 11 | Results from HERA | |
| 15:40 | | coffee break | |
| 16:00 | 12 | Jet Energy Scale at CDF and D0 | |
| 16:30 | 13 | High Q^2 QCD Physics at the Tevatron | |
| 17:00 | 14 | Jet measurements at CMS and ATLAS | |
| 17:30 | | end of session | |
| 18:30 | | tour of Duke Chapel and Organ Recital | |

Notes:

- 1) Session 1 Theoretical Overview removed on suggestion from PS, TW, MDN, SD, TN, AC
- 2) Added released time to LHC detector status and commissioning talks
- 3) Session 3 Proton Spin Physics talk to include results from RHIC, HERMES, COMPASS etc.
- 4) Session 3: moved HERA talk to immediately precede high P_T talks
- 5) Session 3: HERA talk excludes HERMES, latter is covered in Spin Physics talk
- 6) Jet talks from Tevatron and LHC to include detector aspects (not just discussion of algorithms in the case of LHC)

Tuesday 23 May 2006

Session 3 – Electroweak/Top Physics

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|---|------------------|
| 08:30 | 15 | Electroweak Physics – theoretical overview | |
| 09:00 | 16 | W/Z production and Diboson Physics at the Tevatron | |
| 09:30 | 17 | W mass and properties at the Tevatron | |
| 09:55 | 18 | Electroweak Physics at the LHC | |
| 10:25 | | Coffee Break | |
| 10:45 | 19 | Top quark physics – theoretical overview | |
| 11:15 | 20 | Top Mass at the Tevatron | |
| 11:45 | 21 | Top Production and Decay Properties at the Tevatron | |
| 12:15 | 22 | <u>Top Physics at the LHC</u> | |
| 12:45 | | Lunch Break | |

Session 4 – Search for New Physics

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|---------------------------------------|------------------|
| 14:00 | 23 | Theoretical overview | |
| 14:30 | 24 | Higgs Searches at the Tevatron | |
| 14:55 | 25 | SUSY searches at the Tevatron | |
| 15:20 | 26 | Other Exotic searches at the Tevatron | |
| 15:45 | | coffee break | |
| 16:05 | 27 | Higgs Physics at the LHC | |
| 16:30 | 28 | SUSY Physics at the LHC | |
| 16:55 | 29 | Other Exotic Scenarios at the LHC | |
| 17:20 | | end of session | |
| 18:00 | | reception in Sarah Duke Garden | |
| 20:00 | | Public Lecture | |

Notes:

- 1) Session 4: Moved Higgs Searches at Tevatron talk to immediately after Theoretical Overview, as suggested by TW, GB
- 2) Session 4: Talks on Higgs Searches to include SUSY Higgs

Wednesday 24 May 2006

Session 5 – Bottom and Charm Physics

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|---|------------------|
| 08:30 | 30 | Theoretical Overview | |
| 09:00 | 31 | Results from Babar and Belle | |
| 09:30 | 32 | B masses and lifetimes at the Tevatron | |
| 10:00 | 33 | Bs properties at the Tevatron | |
| 10:30 | | Coffee Break | |
| 10:50 | 34 | Rare B decays at the Tevatron | |
| 11:20 | 35 | Triggering , Reconstruction and Physics Performance at LHCb | |
| 11:50 | 36 | Status and Perspectives of <i>b</i> and <i>c</i> physics at ATLAS & CMS | |
| 12:20 | | Lunch Break | |

Excursions in the afternoon

Additional discussion sessions in the afternoon.

Notes:

- 1) Additional time requested for trigger / online selection talks: AC, PJ, PS, TW, MDN (for LHC) and TW, MDN, AC for Tevatron. Also in Session 8, ALICE & LHCb computing talks requested by JS, TN, WZ
- 2) Proposal addressing (1): For Wednesday afternoon, change venue to another Duke location for talks / discussion sessions, to be organized by the experiments. LOC will make rooms available. This additional meeting time can be used for discussions of triggering and online selection, computing and other topics.
- 3) Summary of time allocation (minutes): CDF = D0 = ATLAS = CMS = 250, LHCb = ALICE = 90, RHIC = 90, Theory = 220, BaBar+Belle = 30, HERA = 30

Thursday 25 May 2006

Session 6 – Heavy Ion Physics

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|---|------------------|
| 08:30 | 37 | Theoretical overview | |
| 09:00 | 38 | Soft and Semi-hard QCD physics at RHIC | |
| 09:30 | 39 | Hard QCD physics (heavy quarks, jets and high p_T) at RHIC | |
| 10:00 | | coffee break | |
| 10:20 | 40 | Heavy flavor production at ALICE | |
| 10:50 | 41 | High P_T photons and jets at ALICE | |
| 11:20 | 42 | Heavy Ions at ATLAS and CMS | |
| 11:50 | | Lunch Break | |

Session 7 – Preparing for LHC I

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|--|------------------|
| 13:00 | 43 | Electron, Muon and Photon ID at the Tevatron | |
| 13:30 | 44 | Tau ID at the Tevatron | |
| 14:00 | 45 | Electron and Photon ID at ATLAS and CMS | |
| 14:30 | | coffee break | |
| 14:50 | 46 | Muon ID at ATLAS and CMS | |
| 15:20 | 47 | Tau ID at ATLAS and CMS | |
| 15:50 | 48 | Tracking, Vertexing & Particle ID at LHCb | |
| 16:20 | | end of session | |
| 17:30 | | buses leave for Carolina Inn | |
| 18:30 | | banquet at Carolina Inn | |

Notes:

- 1) Session 6: RHIC talks reorganized according to suggestions from WZ and JS
- 2) Session 7: LHCb talk includes tracking and vertexing

Friday 26 May 2006

Session 8 – Preparing for LHC II

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|--|------------------|
| 08:30 | 49 | b tagging at CDF and D0, lessons for LHC | |
| 09:00 | 50 | Tracking and Vertexing at ATLAS | |
| 09:30 | 51 | Tracking and Vertexing at CMS | |
| 10:00 | 52 | D0 computing and analysis model | |
| 10:30 | | coffee break | |
| 10:50 | 53 | CDF computing and analysis model | |
| 11:20 | 54 | Computing and Analysis model at CMS | |
| 11:50 | 55 | Computing and Analysis model at ATLAS | |
| 12:20 | | Lunch Break | |

Session 9 – Conclusion

| <u>time</u> | <u>id</u> | <u>title</u> | <u>presenter</u> |
|-------------|-----------|---|------------------|
| 13:30 | 56 | Physics Vision – Tevatron, LHC, ILC and beyond | |
| 14:10 | 57 | Future Facilities for Hadron Collider Physics: experimental and accelerator challenges | |
| 14:50 | 58 | Conference Summary and Perspectives | |
| 15:30 | 59 | Closing Remarks | |

Notes:

- 1) Session 9: Future Facilities for HCP talk to include LHC upgrade + VLHC prospects