10 Conclusions

The CDF and DØ collaborations have recently published data that confirms the existence of the sixth flavour of quark in the standard model, the top quark. The preliminary estimates of its mass, $176 \pm 10 \pm 13$ GeV/c^2 (CDF) and $199^{+19}_{-21} \pm 22$ GeV/c^2 (DØ) make it the heaviest known fermion in the standard model. The observed rate of $t\bar{t}$ events is consistent with standard model predictions, and make it the rarest phenomena observed in proton-antiproton annihilations.

The data used to confirm the top quark's existence comprise only half of the total dataset that is expected to be available within a year's time. It is therefore reasonable to expect rapid progress on the measurement of more detailed properties of the top quark. Because of the massiveness of this fermion, it will be a unique probe into the physics of the standard model and what lies beyond this theory.

Acknowlegements

I would like to thank the members of the DØ and CDF collaborations who kindly provided me with details of their respective analyses. I would also like to note that the research reported here would not have been successful without the excellent support of the staff of the Fermilab National Accelerator Laboratory and the institutions involved in this research.

Support for this work from the National Sciences and Engineering Research Council of Canada is gratefully acknowledged.

References

1. S. W. Herb *et al.*, Phys. Rev. Lett. **39**, 352 (1977).
2. R. Keeler, these proceedings.
3. R. Ammar *et al.* (CLEO Collaboration), Phys. Rev. **D49**, 5701 (1994).
4. Review of Particle Properties, Phys. Rev. **D50**, 1304 (1994).
5. D. Decamp *et al.* (ALEPH Collaboration), Phys. Lett. **B236**, 511 (1990);
   O. Adriani *et al.* (L3 Collaboration), Phys. Lett. **B313**, 326 (1993);
   P. Abreu *et al.* (DELPHI Collaboration), Phys. Lett. **B242**, 536 (1990);
   M. Z. Akrawy *et al.* (OPAL Collaboration), Phys. Lett. **B236**, 364 (1990);
   G. S. Abrams *et al.* (MARK II Collaboration), Phys. Rev. Lett. **63**, 2447 (1989);
   I. Adachi *et al.* (TOPAZ Collaboration), Phys. Lett. **B229**, 427 (1989);
   S. Eno *et al.* (AMY Collaboration), Phys. Rev. Lett. **63**, 1910 (1989);
   H. Yoshida *et al.* (VENUS Collaboration), Phys. Lett. **B198**, 570 (1987).
6. F. Abe *et al.* (CDF Collaboration), Phys. Rev. Lett. **74**, 341 (1995);
   F. Abe *et al.* (CDF Collaboration), Phys. Rev. Lett. **73**, 220 (1994);
   C. Albajar *et al.* (UA1 Collaboration), Phys. Lett. **B253**, 503 (1991);
   J. Alitti *et al.* (UA2 Collaboration), Phys. Lett. **B276**, 365 (1991).
7. F. Abe *et al.* (CDF Collaboration), Phys. Rev. Lett. **73**, 2667 (1994).