Conclusions

- **The full-scale prototype of one of the largest MDT precision drift chambers for the ATLAS muon spectrometer has been constructed in 1998 with methods for large-scale production.**

  Demonstrated that the required wire positioning accuracy of $< 20\ \mu$m (rms) can be achieved.

- **The test beam results show the required performance for a large chamber with 432 drift tubes.**

  The use of Ar:CO_2 with only 7% CO_2 as drift gas requires great care in the fabrication and operation of the large number of drift tubes.

- **MDT chamber production for ATLAS has started.**

  The first large production chamber has a wire positioning accuracy of $14\ \mu$m (rms).

- **Demonstration of the high-precision optical alignment monitoring systems for the ATLAS muon spectrometer is in progress.**