



# DØ Fact Sheet

DØ is one of two large particle physics experiments at Fermilab's Tevatron proton-antiproton collider. Its dimensions are 30 x 30 x 50' and it weighs about 5,000 tons.

The DØ collaboration began in 1983. Construction was completed in February 1992 and DØ took data from 1992 – 1996. The experiment was upgraded from 1996 – 2001 and ran from 2001 until the Tevatron ceased operations in 2011, Physics analyses with the data continue.

## Scientific Accomplishments

About 470 papers & 500 Ph.D. theses to date  
Discovery of the top quark and measurement of its properties

- Evidence for Higgs boson production
- Precision measurement of W boson mass
- Observation of vector boson pair production
- Measurement of the oscillation frequency of neutral Bs mesons
- Anomalous di-muon production asymmetry
- Strong interaction production of jets, vector bosons and bosons to test QCD
- Numerous searches for new phenomena

## Trivia

- DØ event displays shown in Keanu Reeves movie "Chain Reaction"
- Fictional physicist Larry Fleinhart joined "DØ team" on TV show NUMB3RS.
- DØ detector is now open as an exhibit for public tours.
- Forward Preshower detector on display at NY Museum of Modern Art

## Current spokespersons

Dmitri Denisov (Fermilab) & Paul Grannis (Stony Brook University)

## Technical Highlights

- Inner silicon detector, 700,000 channels
- Scintillating fiber tracker & preshower, 100,000 channels
- Uranium/liquid argon calorimeter, 50,000 channels
- Muon system (wire chambers and scintillator), 70,000 channels

## Personnel

- 380 scientists equally split between US and non-US.
- 68 institutions
- 15 countries

## Data Facts

- Inspect 20 million collisions/second
- Record 200 events/second
- Data flow of 20 Megabytes/second
- 1 Petabyte of data recorded/year
- 10 billion events stored for analyses
- 10 Petabytes of total disk storage