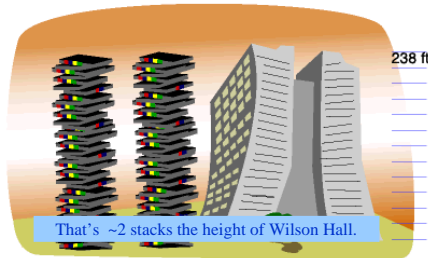# CD in support of Top—then...

The tapes were 8 mm camcorder tapes.

About 5,000 tapes total.
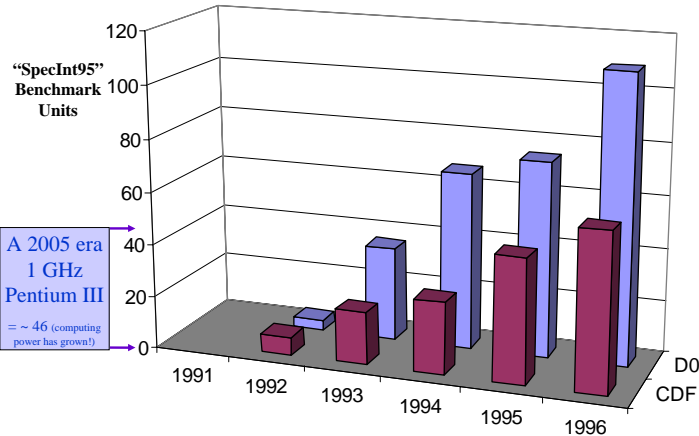

238 ft.
That's ~2 stacks the height of Wilson Hall.

CDF used a tape robot for intermediate data (DST's).

Assignment: Make taped events from ~12.5 Trillion proton-antiproton produced collisions containing ~2,000 Top's accessible world-wide via networks and robots. Process 24x7.
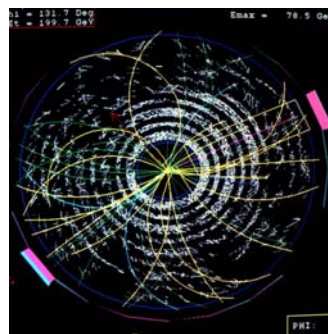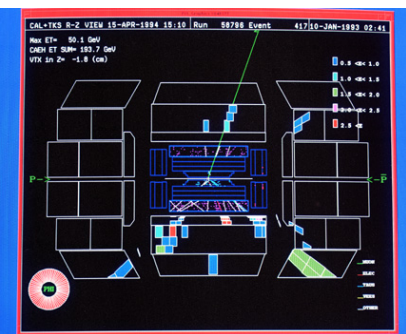

"SpecInt95" Benchmark Units

A 2005 era 1 GHz Pentium III = ~ 46 (computing power has grown!)

1991 1992 1993 1994 1995 1996   D0 CDF

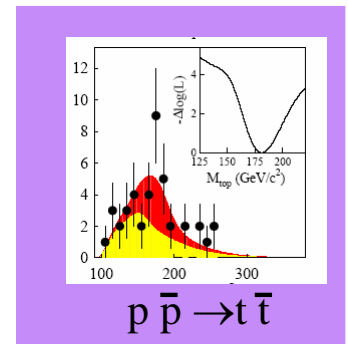A hundred tape drives provided the input/output to/from the raw data on the 8mm tapes.

A hundred IBM and SGI computers reconstructed events.

Assignment: Every 2 years, double farm computing power. Install new; operate existing so researchers can reconstruct accumulating events and analyze them without interruption.

$p \, \bar{p} \rightarrow t \, \bar{t}$

Results

March 2, 1995

DZero did this phase of its computing on the D0FS and FNALD0 (both all VMS) clusters as well as some SGI and IBM desktop analysis nodes.

CDF did this phase of its computing on a 32 processor SGI Challenge XL and also used the FNALD VMS cluster and VMS and UNIX desktops in the trailers.

Assignment: Provide enough post-reconstruction analysis computing to decipher complex events. Make it possible to find the Tops hidden in the collisions.

Result: Observation of ~44 Top events by CDF and DZero in the initial discovery analyses.

CD in support of Top—now...

Raw Data
RECO Data
RECO MC
User Data

TEVATRON
RECYCLER
DZERO

Remote Farms

Central Farms

Data Handling Services

Central Storage

WAN Network

Enstore

dCache and Middleware

Robotics Operations

Traffic on Local networks

Network infrastructure

Central Farms: FermiGrid

VOMS

		US CMS	BNL	Fermi "World"
3rd Qtr 2004	4th Qtr 2004	1st Qtr 2005		

Production

SAMGrid—data handling And Job Submission

Database applications

Remote Analysis

Worker
CDF:
D0:

Fileserv
CDF:
D0:

Central Analysis

Worker nodes:
CDF: 800
D0:   600
Fileservers
CDF: 128
D0:   48

Results

W polarization in Top Decay

Results of SVX single b-tagged sample

data
tt + background

M^2_{l+b} [GeV^2]