

DØ SAM Database

**Adam Lyon (CD-REX/DØ)
DØ DB Taking Stock Meeting
June 17, 2010**

DB Status

Smooth operations thanks to DB group, DBAs, and DB HW support

d0ora2 -- d0ora3 migration!

But strange performance problems persist

Re-analyzing tables does not always work

Oracle bugs?

What do we do if there's a catastrophic performance problem?

Does Oracle 11 give any relief?

Why is our database so special?

DØ SAM Data Handling Status

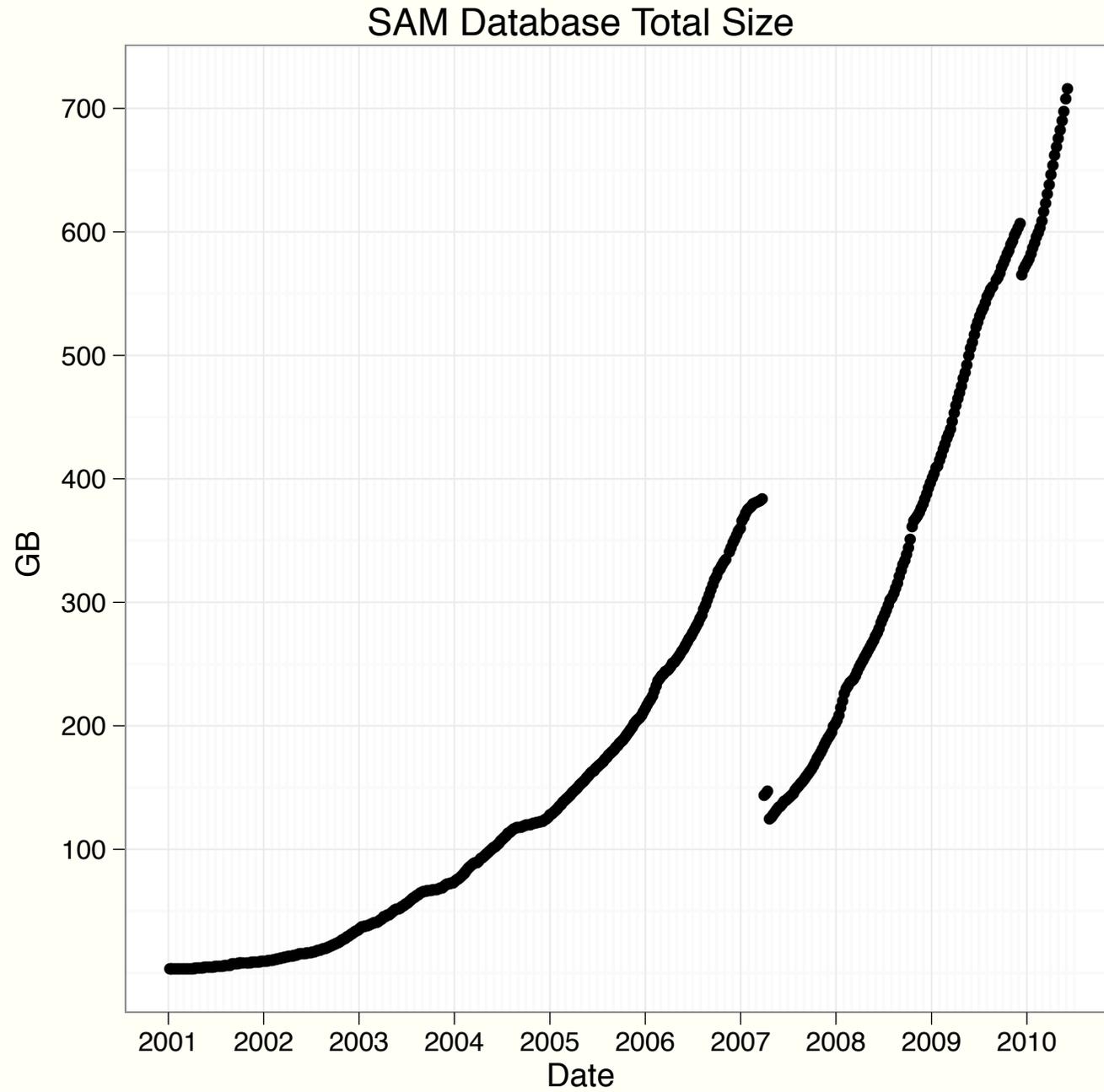
- **SAM continues to run well at DØ**
- **We continue to make upgrades and improvements for performance and robustness**
- **But minor development will end soon – concentrating on SAM for IF experiments**
- **DØ and Tevatron running extremely well**
- **Reconstruction capacity is very high**
- **Monte Carlo production at record levels**

SAM Stats

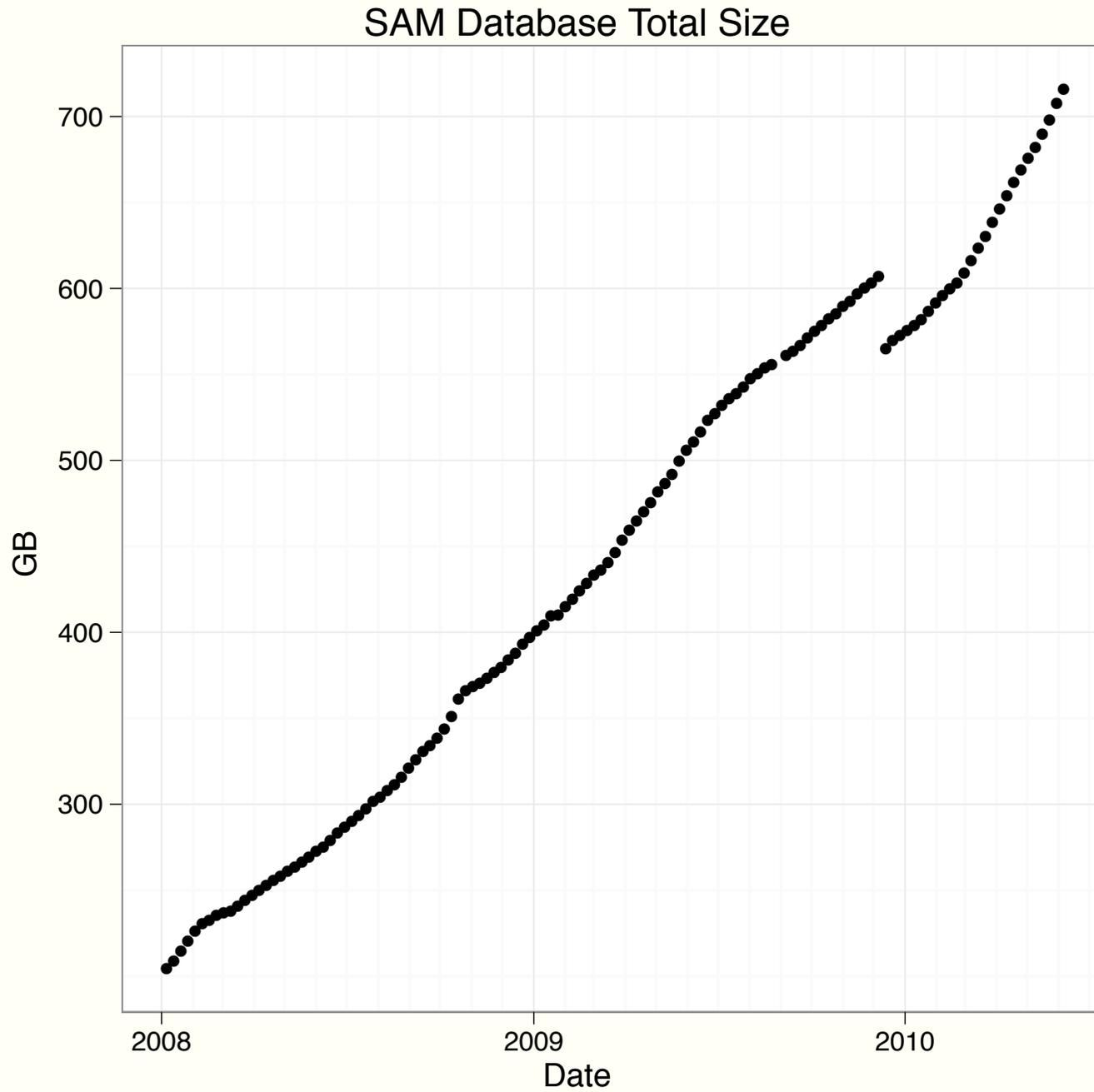
	6/2009	6/2010	Growth
# Files	43,694,822	67,878,656	55%
# Data Sets	889,255	1,075,072	21%
# Snapshots	998,449	1,188,887	19%
# Projects	2,095,394	2,727,708	30%
# Processes	11,058,830	15,297,573	38%

Expect large growth until DØ stops taking data (2011?, 2014?)

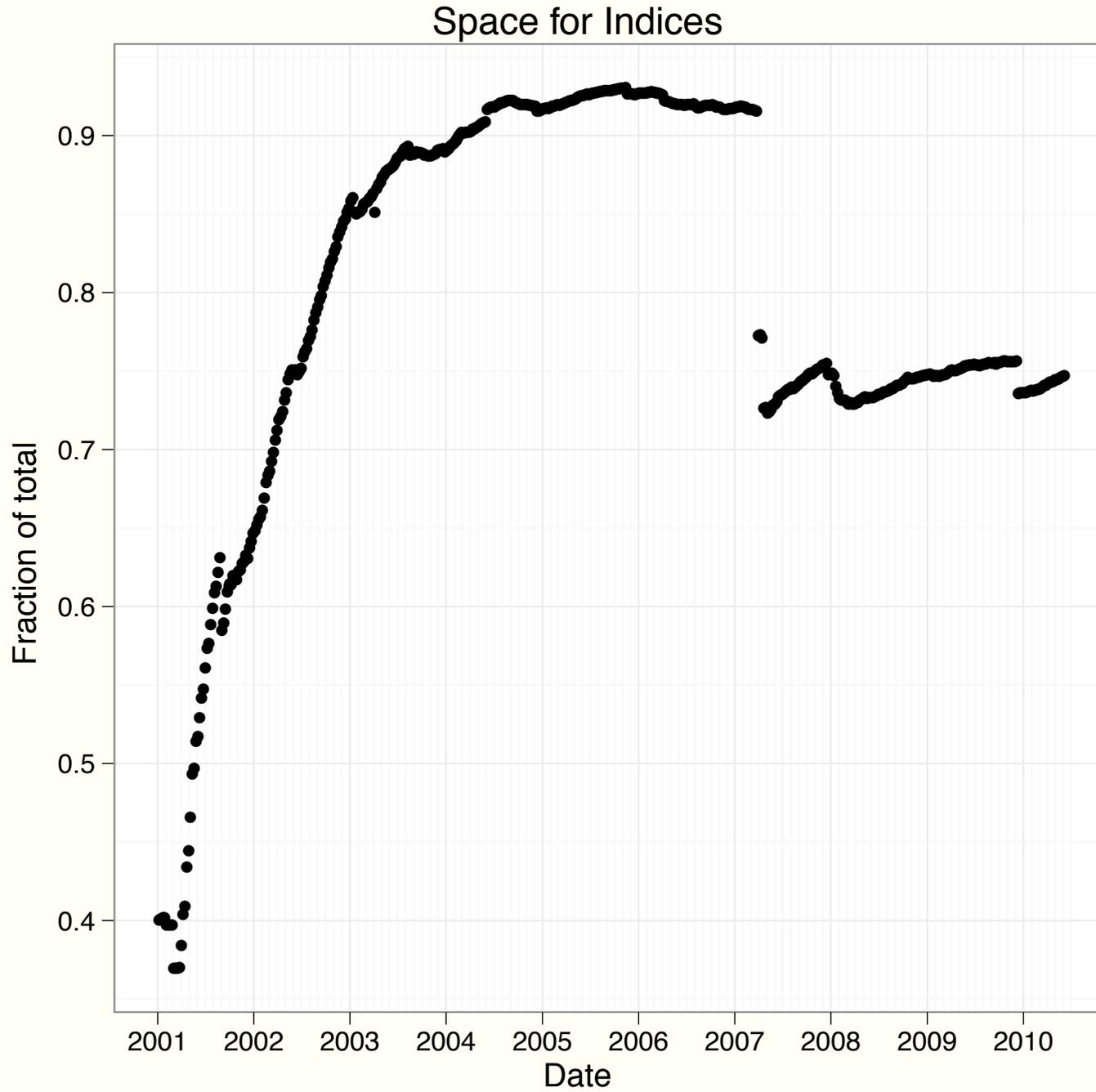
DB Size



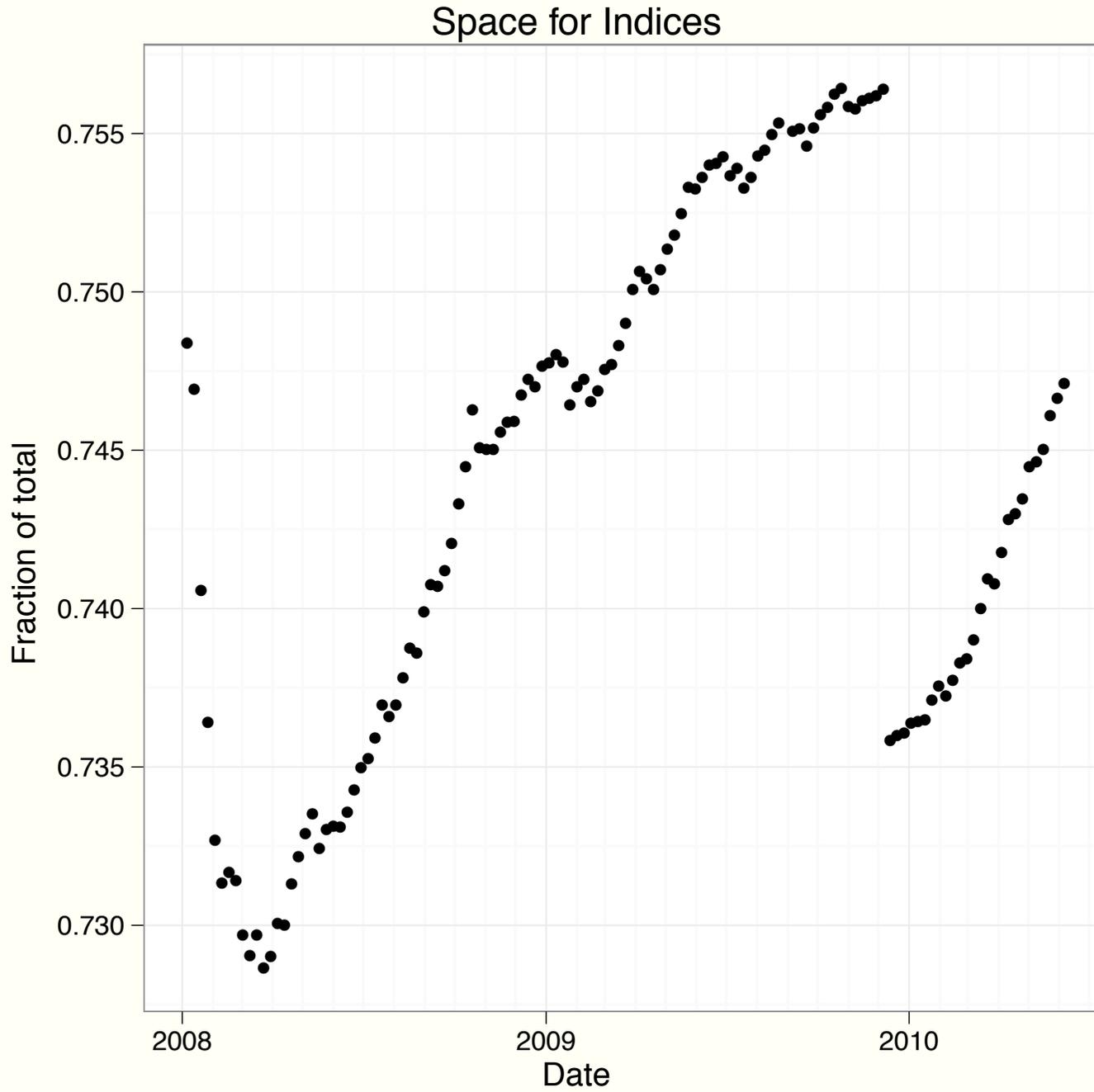
DB Size



Indices



Indices



Projection

- **Most likely over 1 TB database this time next year**
- **Probably ~ 1.2 TB by end of 2011**
- **If Tevatron stops in 2011, then growth will be small for 2012 and beyond**
- **If Tevatron continues past 2011 into 2014, then significant growth! E.g. 2 TB?**

Conclusions

- **What performance issues will we have with a 1 TB database?**
- **1.5 TB? 2 TB?**
- **Will we need to shrink the database and lose information?**
- **Will Oracle 11 help?**