

DESY CMS Physics

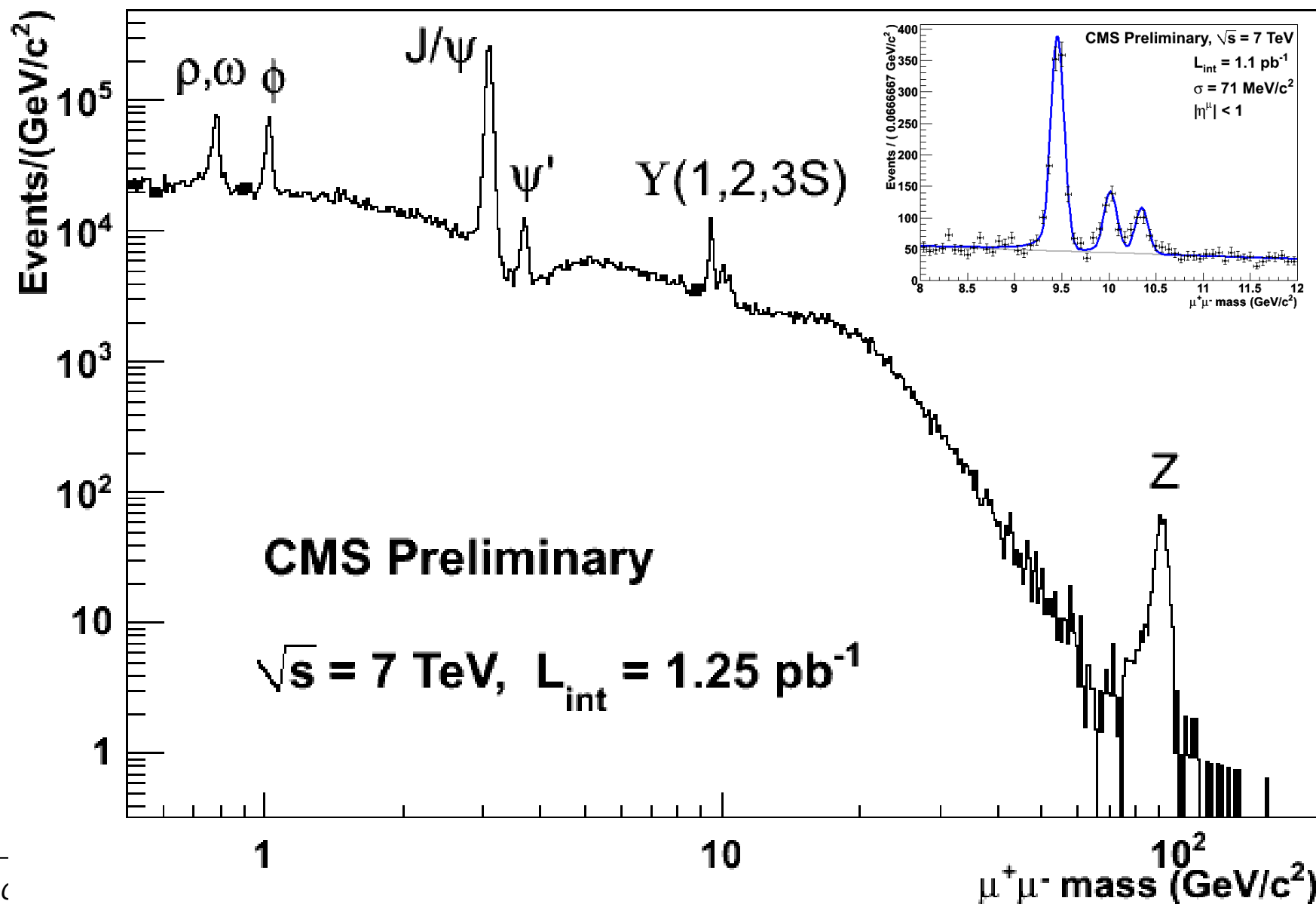
Integrated Luminosity
Communication and Planning at DESY

September 2010

Andreas B. Meyer

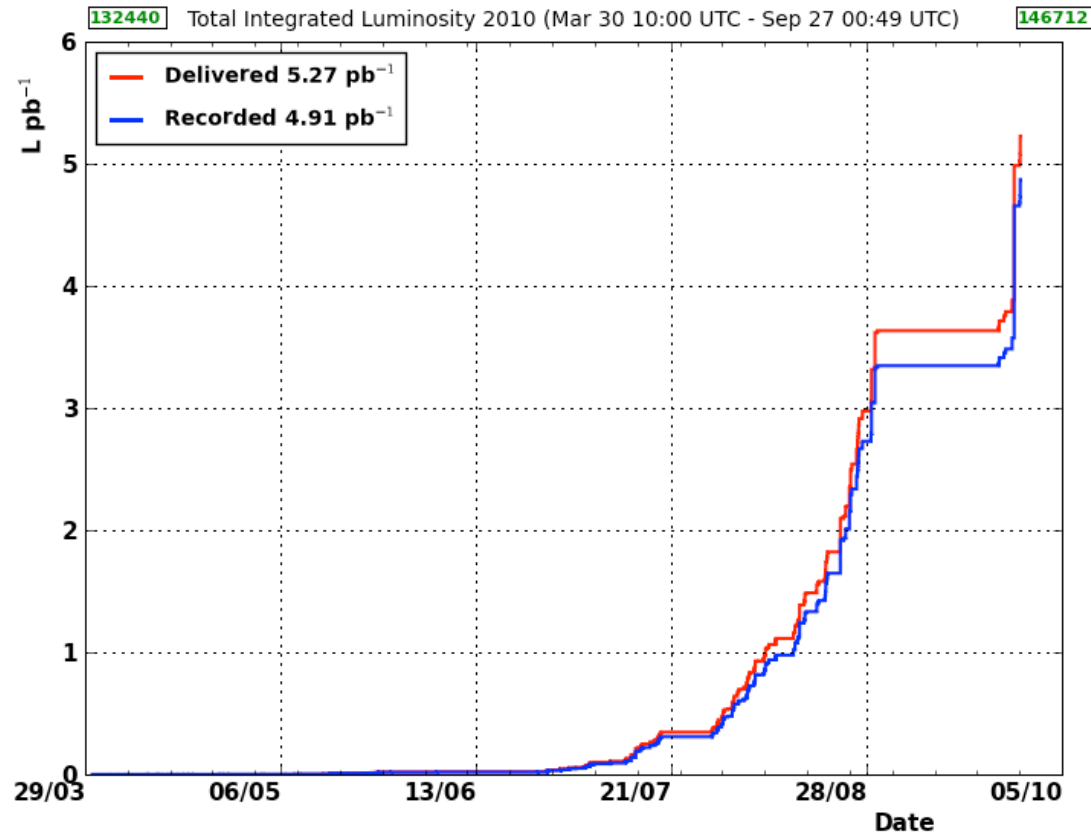


Here is the Compact **Muon** Solenoid



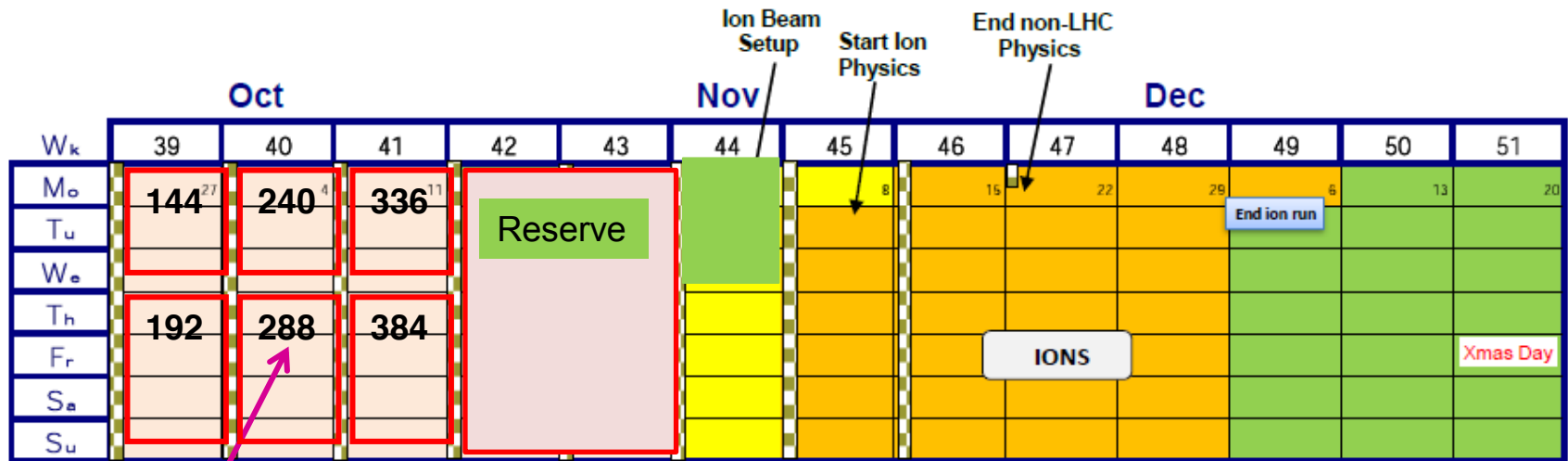
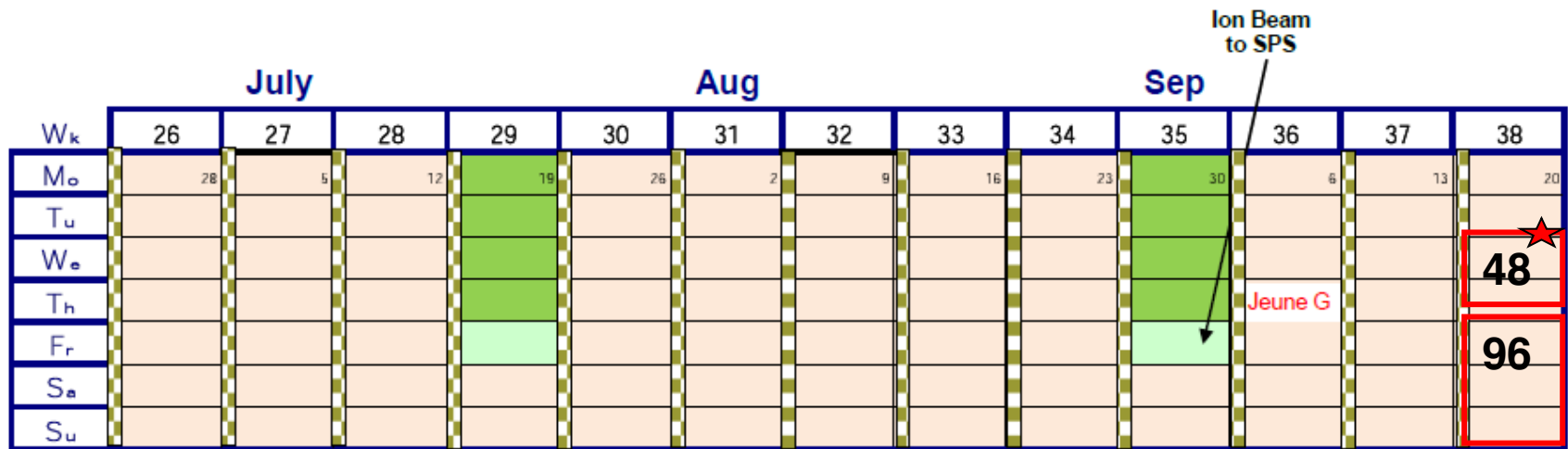


Data Sample



- friday 24 Sept, restart with bunch trains: $\sim 0.7 \text{ pb}^{-1}$ in one fill.
- 56 bunches in trains of eight before moving on to 104 bunches in 13 trains of eight with 93 bunches colliding in CMS and ATLAS
- goal for 2010: $10^{32} \text{ cm}^2\text{s}^{-1}$
- on track for 20-40 pb^{-1}

Aggressive Schedule (short term)



Injection of 24 bunches



CMS Physics Links



- **Top level Physics Page (from cms.cern.ch/iCMS)**
https://cms-users.web.cern.ch/cms-users/Projects/Physics/physics_internal.html
- **Documentation (accessible via CADI - CMS Analysis Database and Interface)**
<http://cms.cern.ch/iCMS/analysisadmin/analysismanagement>
- **Link to CMS physics results**
<https://twiki.cern.ch/twiki/bin/view/CMSPublic/PhysicsResults>
- **Approvals**
<https://twiki.cern.ch/twiki/bin/view/CMS/PhysicsApprovals>
- **PAS**
<http://cdsweb.cern.ch/collection/CMS%20Physics%20Analysis%20Summaries?ln=en>
- **Paper Drafts**
<http://cdsweb.cern.ch/collection/CMS%20Publication%20Drafts>



Contributions from DESY



- **Analysis results**
 - Presentations at CMS meetings
 - Physics Analysis Summaries (preliminary) → next milestone: Moriond
 - Papers
- **Comments to papers and PAS**
 - Organize regular readings at DESY
- **Participate in CMS plenaries**
 - Attend as group → Wednesday 4pm CMS center
- **Presentations at Conferences (CINCO):**
<https://cms-mgt-conferences.web.cern.ch/cms-mgt-conferences/>
 - You are invited to nominate yourself for conference presentations !



DESY Organization



	Higgs	Susy	QCD	Top (HQ+QCD)
Meetings	Thu 10am	Tue 2pm	Mon aftern.	Tue 10am
Webpage (global)		✓		% (✓)
Planning (internal)	✓	(✓)		✓ (---)
Contributions to CMS	✓			starting (---)



2) DESY internal page for planning:
<https://cms.desy.de/e56596/e98784/>



List of presentations to official CMS meetings

List of presentations at the DESY RPC meetings

Date	Presenter	Title	Link
29 Apr 2010	Günter Eckerlin	CMS (incl. Computing, CMS upgrade plans)	DESY Indico
05 Nov 2009	Isabell Melzer-Pellmann	Status of CMS at DESY	DESY Indico
05 May 2009	Rainer Mankel	Status of CMS	DESY Indico

**Documentation effort started, still needs more structure and contents
input from all groups needed**



Activities / Plans



(as far as reported / known centrally)

- **Top**
 - di-lepton cross section measurement → Moriond
 - $Z \rightarrow b\bar{b}$ production (PAS with EWK)
 - Top mass measurement (longer term)
- **Susy**
 - work with Lepton Commissioning Team
 - single and two lepton analysis
 - contribute to data-driven background estimation, J/ψ and $Z \rightarrow$ (SUS-10-001) → Moriond
- **Higgs**
 - $H(Z) \rightarrow \tau\tau \rightarrow \mu\mu$ plan to contribute to $Z \rightarrow \tau\tau$ paper (EWK)
 - $H(Z) \rightarrow \tau\tau \rightarrow e\mu$ (needed for systematic checks)
 - Tracking / B-tagging:
 - strange resonances → to contribute to paper (QCD)
 - validation of tracking performance, D-lifetime → spin-off: measure charm cross section
 - b-tagging with top → PhD starting
- **QCD / Castor**
 - PAS CMS-FWD-10-002 (forward energy flow, prelim. for ICHEP) → paper



Meetings / Events at DESY



- **ATLAS / CMS / Theory Discussions**

<https://indico.desy.de/categoryDisplay.py?categId=194>

- Stimulate discussions between the different groups
- Format: once per month, 90 minutes total

- 20 September: Susy <https://indico.desy.de/conferenceDisplay.py?confId=3199>
- 25 October: W/Z → organization starting now (speakers ?)
- 15 November: Top
- 13 December: tba

- **Dienstag Seminar (LHC-related):**

- Long-range near-side correlations
 - CERN Seminar <http://indico.cern.ch/conferenceDisplay.py?confId=107440>
 - invite CMS speaker to DESY for beginning Nov
- Next LHC-Forum foreseen for 15.12.



LHC Physics School

This week: 27 September - 1 October 2010

- **Program:**
 - **This afternoon: LHC detectors and physics overview**
 - **Tue-Thu: Leptons / Jets / Leptons + Jets**
 - **Mornings: Lectures**
 - **Afternoons: Tutorials (ATLAS/CMS separately)**
 - **Fri: LHC machine and physics overview (theory)**

http://www.terascale.de/schools_and_workshops/lhcphysics2010/

<https://indico.desy.de/conferenceDisplay.py?confId=3084>



German LHC Physics Workshop 2010

27 September - 1 October 2010
DESY, Hamburg

The annual German LHC Physics Workshop brings together Ph.D. students, postdocs and senior physicists for a week of lectures, tutorials and discussions.

In 2010, the event will focus on final states with leptons and jets, which are key ingredients for many topics, including detector understanding and calibration, QCD, top physics, SUSY searches etc.

Invited speakers:

- Helmut Burkhardt (CERN):
LHC machine status and prospects
- Beate Heinemann (Berkeley):
Physics landscape
- Thomas Müller (Karlsruhe):
LHC results
- Wolfram Zauner (CERN):
LHC detector status

Evening lecture:

Hermann-Friedrich Wagner (BMBF):
Competition for Large-scale Research Facilities
The German Infrastructure for Research in Physics and Astronomy

Registration deadline: 1 September 2010. The conference fee is 75 Euros. Please register via the school webpage.
Organizing Committee: Wolfgang Ertmerfeld, Matthias Kossmeier, Andreas Meyer, Thomas Schömer-Badenius, Georg Weiglein
Contact: anac@desy.de

<http://www.terascale.de/LHCPhysics2010>

Tomorrow Tuesday 28 September, 19:30, Auditorium:

Evening Lecture: H.-F. Wagner, "Competition for Large Scale Research Facilities"