



# INTRODUCTION TO CMSDASIA TAIPEI

February 17<sup>th</sup>, 2016

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# WELCOME TO NTU

**YOU ARE HERE!**



# CMSDAS OVERVIEW

- CMSDAS helps CMS physicists learn about CMS analysis and enables participation in the discovery!
- Prior to the school students take a series of pre-school exercises that prepare them to plunge into data analysis.
- **CMSDAS is hands-on, 90% of the time students work with data**, in many cases performing analyses that go beyond the state of the art at CMS.
- Students even have a finite chance of making a physics discovery during the school!

# A BRIEF HISTORY

- First school in 2010 at LHC Physics Center (LPC) at FNAL (EJ-Term); repeated in 2011 with the name “CMSDAS”.
- Extended to 3 school in 2012: LPC, Pisa, Taipei (CMSDAS in Asia = **CMSDASia**)
- 2013: LPC, DESY, Kolkata
- 2014: LPC, CERN
- 2015: LPC, Bari, Korea
- 2016: LPC, **Taipei (back here!)**, DESY





*It is impossible to  
learn how to play a  
piano just by  
watching a great  
performance.*

# PRINCIPLE OF CMSDAS



- One can only learn how to play a piano by actually practicing it, guided by a gifted teacher.
- **So does how we learn to perform the CMS physics analysis!**
- CMSDAS is a collaboration between “students” and “facilitators”.

# SCHOOL STRUCTURE

- Lectures to provide an overview of several general topics.
- Short exercises to build a foundation and understanding of the basics of each topics, especially for the physics objects.
- Long exercises to perform / practice as a full scale physics analysis on the selected topics.
- Competition: participants have to present their work and compete for the “first prize”!

# LECTURES

Title	Speaker
CMS Physics Overview & BSM Searches	Albert de Roeck
CMS Detector and Upgrade	Joel Butler
Physics Performance & Dataset	Giovanni Franzoni
The LHC primer	Inkyu Park
The Big Picture	Cheng-Wei Chiang



# SHORT EXERCISES

Topic	Facilitators
Generators	Vieri Candelise / Shin-Shan Yu
Pileup and MET	Yueh-Feng Liu
Electrons+Photons	Yu Chul Yang / Chia-Ming Kuo
Muons	Junghwan John Goh / Geonmo Ryu
Tracking and Primary Vertices	Tamas Almos Vami
Visualization and Event Display	Yuan Chao
PPD	Giovanni Franzoni / Norraphat Srimanobhas
B Tagging	Andrey Pozdnyakov
Statistics	Mingshui Chen

# LONG EXERCISES

Topic	Facilitators
Top quark mass measurement	Junghwan John Goh / Geonmo Ryu
Z' to Dileptons	Vieri Candelise / Yu Chul Yang
Dark Matter mono-photons	Chia-Ming Kuo / Po-Hsun Chen
SUSY hadronic multijets+MET	Yueh-Feng Liu / Phat Srimanobhas
B2G Boosted Z' to top pair	Shin-Shan Yu / Yuan Chao
Higgs to bb	Andrey Pozdnyakov / Mingshui Chen

# THE COMPETITION

- On Sunday morning, teams are required to prepare a talk summarizing their results and providing a physics motivation.
- Each measurement will be presented by the entire team. The length of the presentation will be **exactly 15 minutes** + 5 mins of questions.
- **The “first prize” will be decided by a vote with all of the participants.**
- Talks cannot be prepared earlier and need to be uploaded to indico before Sunday lunch.



# THINGS YOU MAY WANT TO KNOW FIRST

February 17<sup>th</sup>, 2016

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# REGISTRATION

- I believe you have received these stuff from the registration desk:

**CMSDAS Mug**

*Please use your mug during this week for coffee, tea, or any other drinks*



**Receipt**

**name tag**

# WITH YOUR NAME TAG

- There are several “items” included in your name tag.
- If you are missing something, please let us know!



*Just put it on your mug!*

**Invitation card for the  
“CMSDAS party”**

**Sticker for your mug**

**Your name tag**



**Your wifi  
account/password**

# WIFI GUIDE

- You should find a sticker with account / password in your name tag. This account can be used though out the whole school week.
- Possible ways of connections:
  - ▶ essid: **NTU** (no encryption)
  - ▶ essid: **ntu** (WEP key: **ntuwe**)
  - ▶ essid: **ntu\_peap** (WPA2 encryption, just type in your account & password when you try to connect).
- However, the wifi may not be really trustworthy during your exercises. You may want to use the cables (will be installed in each parallel lecture room).

# PROGRAM OVERVIEW

- A snapshot of our 5-day-long program:

	Feb/17 Wed	Feb/18 Thu	Feb/19 Fri	Feb/20 Sat	Feb/21 Sun
Morning	Plenary at R104 (coffee break next to the lecture room)	Plenary + short exercises at R111 (coffee break next to the lecture room)	Long exercises (coffee break at 13F)	Long exercises (coffee break at 13F)	Long exercises (coffee break at 13F)
Lunch	Group photo & Lunch at R104	Lunch at 13F	Lunch at 13F	Lunch at 13F	Lunch at 13F
Afternoon	Plenary + short exercises (coffee break at 13F)	Short exercises (coffee break at 13F)	Long exercises (coffee break at 13F)	Long exercises (coffee break at 13F)	Final presentations at R111
Evening	Reception at 13F		CMSDAS Party		

*Coffee breaks are served at 13F, except the Wed/Thu morning.*



# ELEVATOR

- This building has an unusual elevator control. Please make sure you take the right one to your parallel lecture room, as well as the 13F lounge.

**high-floor  
elevator**  
*goes to 1F, 8-13F*

**handicap  
elevator**  
*Stop at any floor  
including 13F*



**3 regular  
elevators**  
*Up to 8th floor  
only*

# SOCIAL EVENTS

- We will have two social events: one is the reception this evening on 13F, and the “CMSDAS party” Friday evening at the **Restaurant Sanhoyan**.



*We will have buses sent you to the restaurants Friday 6:30 pm.*

*You will have to find your way back to your hotel.  
(The restaurant is very close to MRT Zhongxiao Dunhua Station)*

# MISC ISSUES

- The registration desk will be move to 13F after lunch today. If you have not yet registered, please get your name tag / mug there afterwards.
- In the parallel lecture rooms you will find an installed switch and some cables in a nearby box (or connected). Please feel free to use them but please don't take the ethernet switch or cable away.
- If you have not yet get your local computing account, please ask us immediately!

# MISC ISSUES

- The last two days (Sat & Sun), there will be an entrance control to this building.
- **Please remember to keep your name tag with you.**
- Remark: there will be a “ComicHorizon” event at the gym next to this building during the upcoming weekend. Don't be too surprised to see many comic-character-dressing (cosplay) people walking around!



PLEASE ENJOY!