

# 9<sup>th</sup> Open LHC*Top*WG Meeting

May 17-18, 2016

## Introduction

Alison Lister (UBC)  
Michelangelo Mangano (CERN)  
Martijn Mulders (CERN)



# LHC*Top*WG : Introduction

- 9<sup>th</sup> open session of the LHC Top Working Group
  - Forum for public discussions (ATLAS+CMS+LHCb+TH) on combination and interpretation of top physics measurements at the LHC
  - Open sessions (twice per year) organized in a way that allows ample time for discussion
- Documentation and coordinates
  - Integrated in the LPCC structure at CERN
  - Agendas available at <https://indico.cern.ch/categoryDisplay.py?categId=4463>
  - Twiki page and link to public plots and documents at [http://lpcc.web.cern.ch/LPCC/index.php?page=top\\_wg](http://lpcc.web.cern.ch/LPCC/index.php?page=top_wg)
  - Subscribe to main open mailing list [lhc-toplhwcwg@cern.ch](mailto:lhc-toplhwcwg@cern.ch)
- Welcome to the first open session of 2016 !

# LHC*Top*WG

## Contacts

Contact person for <b>Theory</b> :	Michelangelo Mangano
Contact person for <b>LHCb</b> :	Victor Coco
Contact person for <b>CMS</b> :	Martijn Mulders
Contact person for <b>ATLAS</b> :	<a href="#">Alison Lister</a>

- **Top pair cross section:** Elizaveta Shabalina (ATLAS), [Jan Kieseler \(CMS\)](#)
- **Single top cross sections:** Reinhard Schwienhorst (ATLAS), Nadjieh Jafari (CMS)
- **Top mass:** Giorgio Cortiana [[→ ?](#)] (ATLAS), Steve Wimpenny (CMS)
- **W helicity:** Kevin Kröniger (ATLAS), Mara Senghi (CMS)
- **Charge asymmetry:** Frederic Deliot (ATLAS), Thorsten Chwalek (CMS)
- **Top pair differential cross sections:** Francesco Spanò (ATLAS), Maria Aldaya (CMS)
- **ttV :** Markus Cristinziani (ATLAS), Andrew Brinkerhoff (CMS)

### [Task forces for dedicated topics:](#)

- **Jet/MET:** Steven Schramm and Dimitris Varouchas (ATLAS), Mikko Vitoulainen and Henning Kirschenmann (CMS)
- **Common acceptance / Pseudo Top:** Kevin Finelli and Dominic Hirschi (ATLAS), Junghwan Goh, Orso Iorio and Mara Senghi (CMS)
- **Radiation and Generators:** James Ferrando and Dominic Hirschi (ATLAS), Benedikt Maier and Markus Seidel (CMS)
- **b-Tagging:** Martin zur Nedden and Liza Mijovic (ATLAS), Luca Scodellaro (CMS)

# Ongoing Combinations / Run I legacy

- **Ongoing combinations:**
  - **Single top Wt at 8 TeV ...approved!** More this afternoon
  - **Charge asymmetry at 8 TeV**, inclusive and differential
  - **ttW/Z at 8 TeV** xsec combination and limits on anomalous couplings
  - **Inclusive ttbar at 7 and 8 TeV**
  - **Other single top channels + Vtb** and combined limits on anomalous couplings (?) → Single Top talk this afternoon
- **Other combinations** still a bit further away
  - **Top mass:** preparatory discussions and studies ongoing ... focus of today's morning session with new experimental and theory inputs
  - **Differential ttbar distributions** (started with comparisons)

# Towards Run II combinations

- Work ongoing in various areas to achieve further improvements in harmonization and synchronization between ATLAS and CMS for Run II
  - Comparisons of new Monte Carlo setups for Run II to data: new results will be presented tomorrow morning
  - Particle objects, fiducial volume definitions and pseudo-top: internal discussions and studies ongoing; some new particle-level results in 13 TeV results shown today (→ talk by Otto Hindrichs)
  - Jets and b-tagging: prescriptions for Run I exist. Revisit for Run II once new calibrations established (soon?).



# Announcement: Top2016, 19-23 Sept

Registration is now open !

More info at <https://indico.cern.ch/event/486433/overview>



# Agenda

## Tuesday, 17 May 2016

10:00 → 10:15 Introduction and WG status report

**Speakers:** Alison Lister (University of British Columbia (CA)), Martijn Mulders (CERN)

10:15 → 10:45 LHC beam energy systematics

**Speaker:** Jorg Wenninger (CERN)

10:45 → 10:55 Beam energy systematics, implications for the measurements: discussion

10:55 → 11:25 Update on t-tbar production results

**Speaker:** Jan Kieseler (CERN)

11:25 → 11:55 Coffee break

11:55 → 12:25 Studies of ttbar production kinematics with Herwig 7

**Speakers:** Peter Richardson (CERN & IPPP, Durham University), Kyle James Read Cormier (University of Cambridge)

12:25 → 12:55 Rivet and pseudo-top update

**Speaker:** Otto Heinz Hindrichs (University of Rochester (US))

12:55 → 15:30 Lunch break

15:30 → 16:00 Top distributions at NNLO

**Speakers:** Alexander Dimitrov Mitov (University of Cambridge (GB)), Alexander Dimitrov Mitov (University of Cambridge)

16:00 → 16:30 CMS single top update

**Speaker:** Matthias Komm (Universite Catholique de Louvain (UCL) (BE))

16:30 → 17:00 Single top, Wt combination + plans for legacy paper

**Speaker:** Reinhard Schwienhorst (Michigan State University (US))

17:00 → 17:30 Boosted tops

**Speaker:** Daniel Marley (University of Michigan (US))

## Wednesday, 18 May 2016

09:00 → 09:30 MC modeling: ATLAS

**Speaker:** John Stakely Keller (DESY (DE))

09:30 → 10:00 MC modeling: CMS

**Speaker:** Javier Fernandez Menendez (Universidad de Oviedo (ES))

10:00 → 10:30 Calibration of the Pythia 8.2 mass using 2-jettiness in e+e-

**Speaker:** Andre Hoang (University of Vienna)

10:30 → 11:00 Coffee break

11:00 → 11:30 Top mass from b-energy peak, update

**Speaker:** Roberto Franceschini (CERN)

11:30 → 12:00 Top mass: new results from CMS

**Speaker:** Benjamin Stieger (University of Nebraska (US))

12:00 → 12:30 Top mass: ATLAS

**Speaker:** Andreas Maier (C)

12:30 → 13:00 ttV at 13 TeV

**Speaker:** Kerim Suruliz (University of Sussex (GB))