

17th Open LHCTopWG Meeting

May 14, 2020

Introduction

Maria Aldaya (DESY)

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Reinhard Schwienhorst (Michigan State)



LHCtopWG : Introduction

- 17th 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) – aim always to allow time for discussion
- Documentation and coordinates
 - Integrated in the LPCC structure at CERN:
<http://lpcc.web.cern.ch/lhc-working-groups>
 - Agendas available at <https://indico.cern.ch/categoryDisplay.py?categId=4463>
 - Public summary plots at
<https://twiki.cern.ch/twiki/bin/view/LHCPhysics/LHCtopWGSummaryPlots>
 - Subscribe to main open mailing list lhc-toplhwcwg@cern.ch
- Welcome to the first open session of 2020!
 - Only one afternoon and only by zoom due to Coronavirus

LHCtopWG Contacts

- **Theory:** Michelangelo Mangano
- **ATLAS:** Reinhard Schwienhorst
- **CMS:** Maria Aldaya
- **LHCb:** Steve Farry

Contacts for on-going combinations / working groups:

- **W helicity:** Mohammad Kareem (ATLAS), Mara Senghi (CMS), now finalizing the publication: Martijn Mulders, Maria Aldaya
- **Top pair cross section:** Veronique Boisvert (ATLAS), Jan Kieseler (CMS)
- **Delta Phi Spin Correlation:** Miriam Watson and James Howarth (ATLAS), Giulia Negro and Afiq Anuar (CMS)
- **Top mass:** Mark Owen (ATLAS), Steve Wimpenny and Martijn Mulders (CMS)
- **Top pair differential cross sec. 8 TeV:** Francesco Spanò (ATLAS), Maria Aldaya (CMS)
- **Top pair differential cross sec. 13 TeV:** James Howarth (ATLAS), Otto Hindrichs (CMS)
- **EFT:** Nuno Castro and Alison Lister (ATLAS), Reza Goldouzian and Seth Moortgat (CMS)
- **Common MC:** Michael Fenton (ATLAS), Kyle Cormier and Javier Fernandez Menendez (CMS, to be replaced)

Also contacts for dedicated topics as needed (JES, b-tagging, generators, pseudo-top definitions, etc)

Also a contact from LHCtopWG for global EFT effort (TBD)

Ongoing Combinations

Ongoing combinations under review within the collaborations:

- **W helicity measurement** - submitted to journal, presented today
- **Top quark pair cross-section 7 & 8 TeV** + extraction top pole mass & α_s - in review by ATLAS and CMS
- **Delta Phi Spin Correlation at 13 TeV** - new plot, update today, then combination

Planned combinations that are a bit further away:

- **Top mass** - preparatory discussions and studies ongoing
- **Differential $t\bar{t}$ distributions** (started with comparisons)

Agenda today

12:00 → 12:10 **Introduction**

Speakers: Maria Aldaya Martin (DESY), Reinhard Schwienhorst (Michigan State University (US))

12:15 → 12:35 **ATLAS highlight**

Speaker: Riccardo Poggi (Universite de Geneve (CH))

12:45 → 13:05 **CMS Highlight**

Speaker: Georgios Bakas (National Technical Univ. of Athens (GR))

13:15 → 13:30 **Towards first Run2 combination: delta_phi(II) differential cross section summary plot and plans**

Speaker: Afiq Aizuddin Anuar (DESY (DE))

13:40 → 14:00 **Top mass and tbar production near threshold**

Speaker: Li Lin Yang

14:10 → 14:25 **Delta Phi Comparisons at NLO**

Speaker: James William Howarth (University of Glasgow (GB))

14:35 → 14:50 **W helicity combination**

Speaker: Mohammad Kareem (York University (CA))

Intro,
highlights

Spin correlation
and
top mass
near threshold

New! W helicity combination

Parton level
fiducial definition

Top modeling

Highlights

15:25 → 15:40 **Dilepton fiducial region definitions (Theory)**

Speakers: Alexander Mitov (University of Cambridge (GB)), Rene Poncelet (Cambridge University)

15:40 → 15:55 **Dilepton fiducial region definitions (CMS)**

Speaker: Mykola Savitskyi (Deutsches Elektronen-Synchrotron (DE))

16:05 → 16:25 **Top modeling ATLAS study of NLO subtraction**

Speaker: Nedaa Alexandra Asbah (Harvard University (US))

16:35 → 16:50 **Top modeling: Theory and Discussion**

Speaker: Stefan Prestel (Fermi National Accelerator Laboratory)

17:00 → 17:20 **ATLAS highlight**

Speaker: Lidia Dell'Asta (INFN e Universita Roma Tor Vergata (IT))

17:30 → 17:50 **CMS Highlight**

Speaker: Mr Victor Rodriguez Bouza (Universidad de Oviedo (ES))