


# ATLAS Top Workshop 2024

📅 28 Apr 2024, 15:00 → 3 May 2024, 09:00 Europe/Zurich

📍 Centro de Ciencias de Benasque Pedro Pascual

Andrea Helen Knue (Technische Universitaet Dortmund (DE)), Aurelio Juste Rozas (ICREA and IFAE (ES)),

👤 Baptiste Ravina (Georg August Universitaet Goettingen (DE)), Elizaveta Shabalina (Georg August Universitaet Goettingen (DE)),  
Marcel Vos (IFIC Valencia (ES)), Nedaa Alexandra Asbah (CERN), Steffen Korn (Georg August Universitaet Goettingen (DE))

Videoconference  ATLAS Top Workshop 2024

Zoom Meeting ID 66428330746

Host Baptiste Ravina

Passcode 79450029


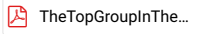

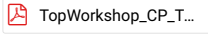
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## MONDAY, 29 APRIL

08:30	→ 09:00	<b>Registration</b>
09:00	→ 09:40	<b>Welcome</b>
09:00		<b>Welcome to the workshop [10 + 5]</b> ⌚ 15m <b>Speaker:</b> Marcel Vos (IFIC Valencia (ES)) 
09:15		<b>Highlights since the last workshop [20 + 5]</b> ⌚ 25m <b>Speaker:</b> Andrea Helen Knue (Technische Universitaet Dortmund (DE)) 
09:40	→ 11:10	<b>Focused on rel 21 - ongoing analyses</b> <b>Conveners:</b> Roman Lysak (Czech Academy of Sciences (CZ)), Tomas Dado (CERN)
09:40		<b>Ongoing run 2 - rel 21 cross section [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Oliver Majersky (Deutsches Elektronen-Synchrotron (DE))
10:10		<b>Ongoing run 2 - rel 21 properties &amp; mass [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Frederic Deliot (Université Paris-Saclay (FR))
10:40		<b>Ongoing run 2 - rel 21 Top+X [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Gianna Loeschcke Centeno (University of Sussex (GB)) 
11:10	→ 11:40	<b>Coffee break</b> ⌚ 30m
11:40	→ 12:40	<b>CP related topics</b> <b>Conveners:</b> Roman Lysak (Czech Academy of Sciences (CZ)), Tomas Dado (CERN)
11:40		<b>CP News talk [20 + 10]</b> ⌚ 30m <b>Speakers:</b> Laura Pintucci (Universita e INFN Trieste (IT)), Steffen Korn (Georg August Universitaet Goettingen (DE)) 
12:10		<b>CP-limited analyses [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Elliot Watton (University of Glasgow (GB))

 CPLimitedAnalyses...

12:40 → 13:10 **YSF talks**

**Convener:** Andrea Helen Knue (Technische Universitaet Dortmund (DE))

12:40 **Jet energy scale from hadronic W mass in ttbar events [10+5]** ⌚ 15m

**Speaker:** Adriana Dohnalova (Comenius University (SK))

12:55 **Towards an in-situ b-jet JES [10+5]** ⌚ 15m

**Speaker:** Miguel Jimenez Ortega (Univ. of Valencia and CSIC (ES))

 MiguelJimenez\_Top...

13:10 → 14:55 **Lunch + time for discussion with sub-group convenors** ⌚ 1h 45m

15:00 → 16:30 **Tutorial: TopCPToolkit**

**Conveners:** Baptiste Ravina (Georg August Universitaet Goettingen (DE)), Steffen Korn (Georg August Universitaet Goettingen (DE)), Thomas James Stevenson (University of Sussex (GB))

15:00 **TopCPToolkit Tutorial** ⌚ 1h 30m

**Speakers:** Baptiste Ravina (Georg August Universitaet Goettingen (DE)), Steffen Korn (Georg August Universitaet Goettingen (DE)), Thomas James Stevenson (University of Sussex (GB))

16:30 → 17:00 **coffee + discussion with experts on TopCPToolkit** ⌚ 30m

17:00 → 18:15 **YSF talks**

**Convener:** Andrea Helen Knue (Technische Universitaet Dortmund (DE))

17:00 **4-Fold Differential Angular Measurement [10+5]** ⌚ 15m

**Speaker:** Raees Ahmad Khan (University of Pittsburgh (US))

17:15 **Measurements of charge and CP asymmetries in b-hadron decays using top-quark events collected by the ATLAS detector in pp collisions at  $\sqrt{s} = 13\text{TeV}$  [10+5]** ⌚ 15m


**Speaker:** Asim Mohammed Aslam (Royal Holloway, University of London (GB))

17:30 **Inclusive cross-section measurements of top-quark pair production in association with charm quarks with the ATLAS experiment [10+5]** ⌚ 15m

**Speaker:** Matthew Kevin Kingston (Georg August Universitaet Goettingen (DE))

17:45 **Evidence of top-quark pair production in lead-lead collisions [10+5]** ⌚ 15m

**Speaker:** Patrycja Anna Potepa (AGH University of Krakow (PL))

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18:00 **Reconstructing Short-Lived Particles Using Graph-Hypergraph Representation Learning [10+5]** ⌚ 15m

**Speaker:** Ethan Lewis Simpson (University of Manchester (GB))

18:15 → 18:45 **Discussion**

**Conveners:** Andrea Helen Knue (Technische Universitaet Dortmund (DE)), Nedaa Alexandra Asbah (CERN)

## TUESDAY, 30 APRIL

09:00 → 10:30 **Focused on rel 24 - ongoing, not including EFT**

**Conveners:** Knut Zoch (Harvard University (US)), Dr Michele Pinamonti (Universita degli Studi di Udine (IT))

09:00 **Top+X [20 + 10]** ⌚ 30m

**Speaker:** Binbin Dong (Michigan State University (US))

09:30 **Top & Higgs [20 + 10]** ⌚ 30m

**Speaker:** Alexander Held (University of Wisconsin Madison (US))

10:00 **Top & searches [20 + 10]** ⌚ 30m

**Speaker:** Claudia Merlassino (Universita degli Studi di Udine (IT))

**10:30** → 11:00 **YSF talks**

**Convener:** Andrea Helen Knue (Technische Universitaet Dortmund (DE))

**10:30** **Four-top-quark production in all-hadronic decay channel with Run2 data [10+5]** ⌚ 15m

**Speaker:** Denys Timoshyn (Charles University (CZ))

**10:45** **Search for charged-lepton-flavour violation in top-quark production and decay [10+5]** ⌚ 15m

**Speaker:** Gabriel Gomes (Universitaet Siegen (DE))

**11:00** → 11:30 **Coffee Break** ⌚ 30m

**11:30** → 12:30 **Focused on rel 24 - ongoing, not including EFT**

**Conveners:** Knut Zoch (Harvard University (US)), Dr Michele Pinamonti (Universita degli Studi di Udine (IT))

**11:30** **Precision Measurements [20 + 10]** ⌚ 30m

**Speaker:** Federica Fabbri (Universita e INFN, Bologna (IT))

**12:00** **cross-section Measurements [20 + 10]** ⌚ 30m

**Speaker:** Barbora Eckerova (Comenius University (SK))

**12:30** → 13:00 **YSF talks**

**Convener:** Andrea Helen Knue (Technische Universitaet Dortmund (DE))

**12:30** **PHYSLITE and TopCPToolkit: observations from a  $t\bar{t}$ +HF analysis [10+5]** ⌚ 15m

**Speaker:** Ryan Quinn (University of British Columbia (CA))

**12:45** **Measuring the quantum interference between singly and doubly resonant top-quark production at  $\sqrt{s} = 13TeV$  in the single-lepton channel [10+5]** ⌚ 15m

**Speaker:** Eleonora Loiacono (Deutsches Elektronen-Synchrotron Campus Zeuthen (DE))

**13:00** → 15:00 **Lunch** ⌚ 2h

**15:00** → 16:30 **Tutorial: FastFrames**

**Convener:** Tomas Dado (CERN)

**15:00** **Introduction to FastFrames [20 + 10]** ⌚ 30m

**Speaker:** Tomas Dado (Technische Universitaet Dortmund (DE))

**15:30** **Tutorial** ⌚ 1h

**Speakers:** Michal Dubovsky (Comenius University (SK)), Tomas Dado (Technische Universitaet Dortmund (DE))

**16:30** → 17:00 **Coffee** ⌚ 30m

**17:00** → 17:30 **YSF talks**

**Convener:** Andrea Helen Knue (Technische Universitaet Dortmund (DE))

**17:00**  **$t\bar{t}Z$ ,  $Z \rightarrow \nu\nu$  cross section analysis: Zero lepton channel [10+5]** ⌚ 15m

**Speaker:** Michael Antony Postill (University of Sheffield (GB))

**17:15** **One lepton final state measurement of  $t\bar{t}Z$  with Z decaying to neutrinos [10+5]** ⌚ 15m

**Speaker:** Zoe Olivia Earnshaw (University of Sussex (GB))

**17:30** → 18:00 **Discussion**

**Conveners:** Andrea Helen Knue (Technische Universitaet Dortmund (DE)), Nedaa Alexandra Asbah (CERN)

WEDNESDAY, 1 MAY

<b>09:00</b>	→ 10:30	<b>Focused on EFT</b> <b>Conveners:</b> Carmen Diez Pardos (Universitaet Siegen (DE)), Josh McFayden (University of Sussex)
09:00		<b>Top analyses contribution to the Global EFT talk [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Andrea Visibile (Nikhef National institute for subatomic physics (NL))
09:30		<b>Current Top+X EFT fit [15 + 5]</b> ⌚ 20m <b>Speakers:</b> Caley Luce Yardley (University of Sussex (GB)), Jacob Julian Kempster (University of Sussex (GB))
09:50		<b>Future Top+X EFT fit [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Knut Zoch (Harvard University (US))
<b>10:30</b>	→ 11:00	<b>Coffee</b> ⌚ 30m
<b>11:00</b>	→ 13:00	<b>Stat discussion + Tutorial on EFTtrefitter</b> <b>Conveners:</b> Josh McFayden (University of Sussex), Thomas James Stevenson (University of Sussex (GB))
11:00		<b>Statistics + discussion</b> ⌚ 45m <b>Speaker:</b> Benedikt Gocke (Technische Universitaet Dortmund (DE))
11:45		<b>EFTtrefitter Tutorial</b> ⌚ 1h <b>Speakers:</b> Jacob Julian Kempster (University of Sussex (GB)), Josh McFayden (University of Sussex), Thomas James Stevenson (University of Sussex (GB))
<b>13:00</b>	→ 18:00	<b>Lunch + Hiking</b> ⌚ 5h

## THURSDAY, 2 MAY

<b>09:00</b>	→ 10:30	<b>Focused on Top modeling</b> <b>Conveners:</b> Federica Fabbri (Universita e INFN, Bologna (IT)), Mr Marcos Miralles Lopez (University of Glasgow)
09:00		<b>Current and future MC generators for ttbar and single top [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Mr Marcos Miralles Lopez (University of Glasgow)
09:30		<b>Current status of the recommendations and future in ttX [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Quake Qin (Institut de Fisica d'Altes Energies (IFAE))
10:00		<b>How to do requests, details of the MC campaigns, &amp; simulation releases [20 + 10]</b> ⌚ 30m <b>Speaker:</b> Lucia Keszeghova (Comenius University (SK))
<b>10:30</b>	→ 10:45	<b>YSF talks</b> <b>Convener:</b> Federica Fabbri (Universita e INFN, Bologna (IT))
10:30		<b>Parton Shower/Hadronisation Uncertainty Studies [10+5]</b> ⌚ 15m <b>Speaker:</b> Betsy Cunnett (University of Sussex (GB))
<b>10:45</b>	→ 11:15	<b>Coffee</b> ⌚ 30m
<b>11:15</b>	→ 12:45	<b>Tutorial: TopMC</b> <b>Conveners:</b> Federica Fabbri (Universita e INFN, Bologna (IT)), Katharina Voss (Universitaet Siegen (DE))
11:15		<b>Top MC tutorial</b> ⌚ 1h 30m <b>Speaker:</b> Katharina Voss (Universitaet Siegen (DE))
<b>12:45</b>	→ 13:30	<b>Focused on Top modeling</b> <b>Convener:</b> Federica Fabbri (Universita e INFN, Bologna (IT))
12:45		<b>Theory invited talk with focus on bb4l [30+15]</b> ⌚ 45m <b>Speaker:</b> Tomas Jezo (WWU ITP)

13:30 → 15:00 **Lunch** ⌚ 1h 30m

15:00 → 16:30 **Focused to looking into the future**

**Conveners:** Andrea Helen Knue (Technische Universitaet Dortmund (DE)), Peter Berta (Charles University, Prague (CZ))

15:00 **Cross section [20 + 10]** ⌚ 30m

**Speaker:** Dr Marino Romano (INFN Bologna (IT))

15:30 **properties & mass [20 + 10]** ⌚ 30m

**Speaker:** Marcel Vos (IFIC Valencia (ES))

16:00 **Top+X [20 + 10]** ⌚ 30m

**Speaker:** Elizaveta Shabalina (Georg August Universitaet Goettingen (DE))

16:30 → 17:00 **Coffee** ⌚ 30m

17:00 → 17:30 **YSF talks**

**Convener:** Andrea Helen Knue (Technische Universitaet Dortmund (DE))

17:00 **Progress towards probing the EFT with boosted ttZ [10+5]** ⌚ 15m

**Speaker:** Kees Benkendorfer (Harvard University (US))

17:15 **Classification of multi-top processes and backgrounds using Transformer with auxiliary tasks [10+5]** ⌚ 15m

**Speaker:** Hui-Chi Lin (University of Michigan (US))

17:30 → 18:00 **Close out**

17:30 **Close out talk [20 + 10]** ⌚ 30m

**Speaker:** Nedaa Alexandra Asbah (CERN)