

# **Standard Model at the LHC 2024**

## **Report of Contributions**

Contribution ID: 77

Type: **not specified**

## Welcome

*Tuesday, 7 May 2024 09:00 (20 minutes)*

**Presenters:** Prof. ZOCCOLI, Antonio (INFN President); FACCINI, Riccardo (Dean of "Facoltà di Scienze Matematiche, Fisiche e Naturali" Sapienza University); MALVEZZI, Sandra (Universita & INFN, Milano-Bicocca (IT))

Contribution ID: 78

Type: **not specified**

## **Precision measurements with Z boson decays at LHC (ATLAS,CMS and LHCb) [LHCb]**

*Tuesday, 7 May 2024 09:20 (25 minutes)*

**Presenter:** RAMOS PERNAS, Miguel (University of Warwick (GB))

**Session Classification:** Session

Contribution ID: 79

Type: **not specified**

## **Precision measurements with W boson decays at LHC (ATLAS,CMS and LHCb)[CMS]**

*Tuesday, 7 May 2024 09:45 (25 minutes)*

**Presenter:** CIPRIANI, Marco (Universita & INFN Pisa (IT))

**Session Classification:** Session

Contribution ID: **82**

Type: **not specified**

## **Theoretical progress on NLO EW corrections**

*Tuesday, 7 May 2024 11:05 (25 minutes)*

**Presenter:** SCHUMANN, Steffen

**Session Classification:** Session

Contribution ID: 83

Type: **not specified**

## **Transverse-momentum resummation for Drell-Yan production at the LHC and a new observable for W-mass measurements (theory)**

*Tuesday, 7 May 2024 10:40 (25 minutes)*

**Presenter:** TORRIELLI, Paolo (Universita e INFN Torino (IT))

**Session Classification:** Session

Contribution ID: **84**

Type: **not specified**

## **Polarized predictions in diboson final states (theory)**

*Thursday, 9 May 2024 11:30 (25 minutes)*

**Presenter:** PONCELET, Rene (IFJ PAN Krakow)

**Session Classification:** Session

Contribution ID: 85

Type: **not specified**

## **Polarized measurements in diboson final states (ATLAS+CMS)**

*Thursday, 9 May 2024 11:55 (25 minutes)*

**Presenter:** DI CIACCIO, Lucia (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Session



Contribution ID: **86**

Type: **not specified**

## **Electroweak measurements using Run 3 data (ATLAS)**

*Thursday, 9 May 2024 12:20 (15 minutes)*

**Presenter:** APERIO BELLA, Ludovica (Deutsches Elektronen-Synchrotron (DE))

**Session Classification:** Session

Contribution ID: 87

Type: **not specified**

## **Electroweak measurements using Run 3 data (CMS)**

*Thursday, 9 May 2024 12:35 (15 minutes)*

**Presenter:** VICO VILLALBA, Carlos (Universidad de Oviedo (ES))

**Session Classification:** Session

Contribution ID: **88**

Type: **not specified**

## **Precise theoretical predictions and mixed QCD-EW corrections in Drell-Yan production at the LHC**

*Thursday, 9 May 2024 14:20 (30 minutes)*

**Presenter:** VICINI, Alessandro (Università degli Studi e INFN Milano (IT))

**Session Classification:** Session

Contribution ID: **90**

Type: **not specified**

## **Determinations of the strong coupling constant [ATLAS and CMS]**

*Tuesday, 7 May 2024 11:30 (25 minutes)*

**Presenter:** CORRADI, Massimo (Sapienza Universita e INFN, Roma I (IT))

**Session Classification:** Session

Contribution ID: **91**

Type: **not specified**

## **Jet substructure studies (high pT) [ATLAS and CMS]**

*Tuesday, 7 May 2024 11:55 (25 minutes)*

**Presenter:** BALDENEGRO BARRERA, Cristian (Sapienza Universita e INFN, Roma I (IT))

**Session Classification:** Session

Contribution ID: 92

Type: **not specified**

## **Perturbative inputs in Monte Carlo event generators (theory)**

*Tuesday, 7 May 2024 14:15 (25 minutes)*

**Presenter:** REICHELT, Daniel (Durham University)

**Session Classification:** Session

Contribution ID: 93

Type: **not specified**

## **Non-perturbative modelling in Monte Carlo event generators (theory)**

*Tuesday, 7 May 2024 14:40 (25 minutes)*

**Presenter:** GIESEKE, Stefan

**Session Classification:** Session

Contribution ID: 94

Type: **not specified**

## **Jet fragmentation studies at LHC (low pT) [LHCb]**

*Tuesday, 7 May 2024 12:20 (25 minutes)*

**Presenter:** LESSER, Ezra (CERN)

**Session Classification:** Session



Contribution ID: 95

Type: **not specified**

## PDFs @ N3LO (theory)

*Tuesday, 7 May 2024 15:05 (25 minutes)*

**Presenter:** CRIDGE, Thomas

**Session Classification:** Session

Contribution ID: **96**

Type: **not specified**

## **Recent advances in fixed-order calculations (theory)**

*Thursday, 9 May 2024 17:05 (25 minutes)*

**Presenter:** GRAZZINI, Massimiliano

**Session Classification:** Session

Contribution ID: 97

Type: **not specified**

## **Non global recent advances (theory)**

**Session Classification:** Session

Contribution ID: 98

Type: **not specified**

## **Top Yukawa couplings from ttH and top physics (ATLAS+CMS)**

*Tuesday, 7 May 2024 15:30 (30 minutes)*

**Presenter:** SCHROEDER, Matthias (Hamburg University (DE))

**Session Classification:** Session

Contribution ID: 99

Type: **not specified**

## **BSM interpretations of LHC Higgs measurements**

*Tuesday, 7 May 2024 16:00 (30 minutes)*

**Presenters:** SANTOS, Rui (ISEL); SANTOS, Rui (ISEL and CFTC-UL)

**Session Classification:** Session

Contribution ID: **100**

Type: **not specified**

## **New approaches for CP violation probes in the Higgs sector**

*Tuesday, 7 May 2024 17:00 (30 minutes)*

**Presenter:** PILKINGTON, Andrew (University Of Manchester)

**Session Classification:** Session

Contribution ID: **101**

Type: **not specified**

## **Higgs possibilities at future Higgs factories (Experiments meet theory)**

*Tuesday, 7 May 2024 17:30 (30 minutes)*

**Presenter:** CEPEDA, Maria (CIEMAT)

**Session Classification:** Session

Contribution ID: 105

Type: **not specified**

## **New experimental techniques and new analysis ideas for probes of quark Yukawa interactions (excluding top) (ATLAS+CMS)**

*Thursday, 9 May 2024 09:00 (30 minutes)*

**Presenter:** MENDES JACQUES DA COSTA, Antonio Manuel (University of Manchester (GB))

**Session Classification:** Session



Contribution ID: **106**

Type: **not specified**

## **Phenomenology of multi-Higgs final states (theory)**

*Thursday, 9 May 2024 09:30 (20 minutes)*

**Presenters:** KERNER, Matthias (KIT); KERNER, Matthias

**Session Classification:** Session

Contribution ID: **107**

Type: **not specified**

## **Overview of current experimental knowledge on Di-Higgs production (ATLAS+CMS)**

*Thursday, 9 May 2024 09:50 (20 minutes)*

**Presenter:** VERNAZZA, Elena (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Session

Contribution ID: **108**

Type: **not specified**

## **Full vs. simplified likelihoods in Higgs (re)interpretations (Exp + theory, invited speaker)**

*Thursday, 9 May 2024 10:10 (20 minutes)*

**Presenter:** WARDLE, Nicholas (Imperial College (GB))

**Session Classification:** Session

Contribution ID: **109**

Type: **not specified**

## **Current status, scope and future developments for STXS and differential Higgs measurements (ATLAS+CMS)**

*Thursday, 9 May 2024 10:30 (30 minutes)*

**Presenter:** HEIM, Sarah

**Session Classification:** Session

Contribution ID: **110**

Type: **not specified**

## **Synergies between flavour and high $p_T$ observables (theory)**

*Wednesday, 8 May 2024 10:36 (24 minutes)*

**Presenter:** NOLLEN, Lara (TU Dortmund)

**Session Classification:** Session

Contribution ID: **111**

Type: **not specified**

## **Geosmeft: recent developments (theory)**

*Friday, 10 May 2024 12:30 (30 minutes)*

**Presenter:** MARTIN, Adam Orion (University of Notre Dame (US))

**Session Classification:** Session

Contribution ID: 112

Type: **not specified**

## Update on global SMEFT fits

*Friday, 10 May 2024 11:30 (30 minutes)*

**Presenter:** TER HOEVE, Jaco (Nikhef and VU Amsterdam)

**Session Classification:** Session

Contribution ID: 113

Type: **not specified**

## **Indirect constraints on poorly constrained SMEFT operators (theory)**

*Wednesday, 8 May 2024 09:48 (24 minutes)*

**Primary author:** GIARDINO, Pier Paolo (University Autonoma of Madrid)

**Presenter:** GIARDINO, Pier Paolo (University Autonoma of Madrid)

**Session Classification:** Session



Contribution ID: 114

Type: **not specified**

## Matching of EFT to UV complete models (theory)

*Wednesday, 8 May 2024 09:24 (24 minutes)*

**Presenter:** FUENTES-MARTIN, Javier (Universidad de Granada)

**Session Classification:** Session

Contribution ID: 115

Type: **not specified**

## **Study of EFT effects in neutral TGC and aQGC couplings in EW processes (ATLAS+CMS)**

*Wednesday, 8 May 2024 09:00 (24 minutes)*

**Primary author:** HUANG, Zuchen (University of Manchester)

**Presenter:** HUANG, Zuchen (University of Manchester)

**Session Classification:** Session

Contribution ID: **116**

Type: **not specified**

## **EFT interpretations of single-Higgs and Higgs boson pair production (ATLAS+CMS)**

*Friday, 10 May 2024 12:00 (30 minutes)*

**Presenter:** CALANDRI, Alessandro (Eidgenoessische Technische Hochschule Zuerich (CH))

**Session Classification:** Session

Contribution ID: 117

Type: **not specified**

## **Global effective field theory combinations in ATLAS and CMS (ATLAS+CMS)**

*Friday, 10 May 2024 14:30 (30 minutes)*

**Presenter:** VISIBLE, Andrea (Nikhef National institute for subatomic physics (NL))

**Session Classification:** Session

Contribution ID: **118**

Type: **not specified**

## **Latest EFT constraints from measurements in the top quark sector (ATLAS+CMS)**

*Wednesday, 8 May 2024 10:12 (24 minutes)*

**Presenter:** SANCHEZ CRUZ, Sergio (CERN)

**Session Classification:** Session

Contribution ID: **119**

Type: **not specified**

## Theory of rare $b \rightarrow d \ell \ell$ decays

*Wednesday, 8 May 2024 11:53 (25 minutes)*

**Presenter:** GISBERT, Hector

**Session Classification:** Session

Contribution ID: 120

Type: **not specified**

## **Electroweak penguin results (ATLAS+CMS+LHCb)**

*Wednesday, 8 May 2024 12:18 (25 minutes)*

**Presenter:** VIEITES DIAZ, Maria (CERN)

**Session Classification:** Session

Contribution ID: 121

Type: **not specified**

## Charged current semileptonic decays (LHCb)

*Wednesday, 8 May 2024 12:43 (17 minutes)*

**Presenters:** CALVI, Marta (Univ. degli Studi Milano-Bicocca); CALVI, Marta (Universita & INFN, Milano-Bicocca (IT))

**Session Classification:** Session



Contribution ID: 122

Type: **not specified**

## **Leptoquark and Z' searches (ATLAS + CMS)**

*Wednesday, 8 May 2024 14:30 (30 minutes)*

**Presenter:** ZHANG, Jie (Shandong University (CN))

**Session Classification:** Session

Contribution ID: 123

Type: **not specified**

## Collider Neutrinos (FASER, SND@LHC)

*Friday, 10 May 2024 10:35 (25 minutes)*

**Presenters:** DALLAVALLE, Marco (Universita e INFN, Bologna (IT)); DALLAVALLE, Marco (Universita e INFN (IT))

**Session Classification:** Session

Contribution ID: 124

Type: **not specified**

## **Status of global fits for both FCNC and charged current anomalies (theory, joint with EFT)**

*Wednesday, 8 May 2024 11:30 (23 minutes)*

**Presenter:** ALLWICHER, Lukas

**Session Classification:** Session

Contribution ID: 125

Type: **not specified**

## Charm CPV including U-spin breaking effects (theory)

*Friday, 10 May 2024 09:00 (23 minutes)*

**Presenter:** SCHACHT, Stefan (University of Manchester)

**Session Classification:** Session

Contribution ID: 126

Type: **not specified**

## Status of $|V_{ub}|$ , $|V_{cb}|$ determination (theory)

*Friday, 10 May 2024 09:23 (23 minutes)*

**Presenter:** FAEL, Matteo (CERN)

**Session Classification:** Session

Contribution ID: 127

Type: **not specified**

## Charm, gamma, phi\_s recent results [LHCb]

*Friday, 10 May 2024 09:46 (24 minutes)*

**Presenter:** LUPATO, Anna (Università di Padova & INFN)

**Session Classification:** Session

Contribution ID: 128

Type: **not specified**

## **CKM determination from top quark decays (theory)**

**Presenter:** ), ( speaker to be announced

**Session Classification:** Session

Contribution ID: **129**

Type: **not specified**

## **HF production, spectroscopy (ATLAS+CMS+LHCb)**

*Friday, 10 May 2024 10:10 (25 minutes)*

**Presenter:** MASTRAPASQUA, Vincenzo (Universita e INFN, Bari (IT))

**Session Classification:** Session



Contribution ID: 130

Type: **not specified**

## **ATLAS+CMS measurements on $t\bar{t}+b\bar{b}/t\bar{t}+t\bar{t}$ [CMS]**

*Wednesday, 8 May 2024 16:30 (30 minutes)*

**Presenter:** KIM, Tae Jeong (Hanyang University (KR))

**Session Classification:** Session

Contribution ID: 131

Type: **not specified**

## **ATLAS+CMS measurements (ttW/ttZ/ttgamma) [ATLAS]**

*Wednesday, 8 May 2024 17:00 (30 minutes)*

**Presenter:** JAMIESON, Jonathan (University of Glasgow (GB))

**Session Classification:** Session

Contribution ID: 132

Type: **not specified**

## **State-of-the-art predictions for tt+H/tt+W/(tt+Z)**

*Wednesday, 8 May 2024 17:30 (30 minutes)*

**Presenter:** KULESZA, Anna Katarzyna (Universität Münster (DE))

**Session Classification:** Session

Contribution ID: 133

Type: **not specified**

## **Top-quark entanglement: ATLAS Measurement**

*Friday, 10 May 2024 15:30 (20 minutes)*

**Presenter:** SIMPSON, Ethan Lewis (University of Manchester (GB))

**Session Classification:** Session

Contribution ID: 134

Type: **not specified**

## Top-quark entanglement: CMS Measurement

*Friday, 10 May 2024 15:50 (20 minutes)*

**Presenter:** NEGRO, Giulia (Purdue University (US))

**Session Classification:** Session

Contribution ID: 135

Type: **not specified**

## Top-quark entanglement: Theory

*Friday, 10 May 2024 15:00 (30 minutes)*

**Presenter:** MANTANI, Luca (DAMTP, University of Cambridge)

**Session Classification:** Session

Contribution ID: 136

Type: **not specified**

## **ATLAS+CMS top cross-sections**

*Friday, 10 May 2024 16:40 (25 minutes)*

**Presenters:** BOUDREAU, Joseph (University of Pittsburgh (US)); BOUDREAU, Joseph (University of Pittsburgh)

**Session Classification:** Session

Contribution ID: 137

Type: **not specified**

## **ATLAS+CMS top rare searches (LFV & FCNC)**

*Friday, 10 May 2024 17:05 (25 minutes)*

**Presenter:** YAZGAN, Efe (National Taiwan University (TW))

**Session Classification:** Session



Contribution ID: 138

Type: **not specified**

## **State-of-the-art predictions for on/off-shell top-pair production and decays [theory]**

*Friday, 10 May 2024 17:30 (30 minutes)*

**Presenter:** BEVILACQUA, Giuseppe (NCSR Demokritos)

**Session Classification:** Session

Contribution ID: 140

Type: **not specified**

## Precise predictions for V+jet production (theory)

*Thursday, 9 May 2024 14:50 (25 minutes)*

**Presenter:** STAGNITTO, Giovanni (University of Milano Bicocca)

**Session Classification:** Session

Contribution ID: 141

Type: **not specified**

## **Recent V+heavy flavor measurements with 13 TeV data (ATLAS + CMS + LHCb)**

*Thursday, 9 May 2024 15:40 (25 minutes)*

**Presenter:** BLUMENSCHEN, Ulla (University of London (GB))

**Session Classification:** Session

Contribution ID: 142

Type: **not specified**

## **Recent development: NNLO heavy flavour new jet algorithms (theory)**

*Thursday, 9 May 2024 17:30 (30 minutes)*

**Presenter:** MITOV, Alexander (University of Cambridge (GB))

**Session Classification:** Session

Contribution ID: 144

Type: **not specified**

## **Precise predictions for V+heavy flavour production (theory)**

*Thursday, 9 May 2024 15:15 (25 minutes)*

**Presenter:** HARTANTO, Heribertus Bayu (Cambridge University)

**Session Classification:** Session

Contribution ID: 146

Type: **not specified**

## **HEFT vs. SMEFT and how to tell them apart (theo)**

**Session Classification:** Session

Contribution ID: 147

Type: **not specified**

## **Study of EFT effects in neutral TGC and aQGC couplings in EW processes**

**Session Classification:** Session

Contribution ID: 170

Type: **not specified**

## Rare decays of Bc mesons

*Wednesday, 8 May 2024 15:00 (10 minutes)*

**Presenter:** SONI, Nakul Rajendrakumar (INFN sezione di Napoli)

**Session Classification:** Session



Contribution ID: 171

Type: **not specified**

## **Constraining the leptoquark pair-production cross-section using tau leptons with the ATLAS detector**

*Wednesday, 8 May 2024 15:10 (10 minutes)*

**Presenter:** MORODEI, Federico (Sapienza Universita e INFN, Roma I (IT))

**Session Classification:** Session

Contribution ID: 172

Type: **not specified**

## **Energy scaling behaviour of intrinsic $kT$ in Drell-Yan events**

*Wednesday, 8 May 2024 15:20 (10 minutes)*

**Presenter:** JIN, Weijie (University of Zurich (CH))

**Session Classification:** Session

Contribution ID: 173

Type: **not specified**

## **Search for the Higgs boson decay in charm quarks at the CMS experiment**

*Wednesday, 8 May 2024 15:30 (10 minutes)*

**Presenter:** ZAZA, Angela (Universita e INFN, Bari (IT))

**Session Classification:** Session

Contribution ID: 174

Type: **not specified**

## **Measurement of the differential distributions of $B_s^0 \rightarrow D_s^* \mu \nu$ decay with the LHCb detector**

*Wednesday, 8 May 2024 15:40 (10 minutes)*

**Presenter:** MANGANELLA, Federico (INFN e Universita Roma Tor Vergata (IT))

**Session Classification:** Session

Contribution ID: 175

Type: **not specified**

## **Triboson production in the SMEFT**

*Wednesday, 8 May 2024 15:50 (10 minutes)*

**Presenter:** CELADA, Eugenia

**Session Classification:** Session

Contribution ID: 176

Type: **not specified**

## Recent results from the SND@LHC experiment

*Thursday, 9 May 2024 16:35 (10 minutes)*

**Presenter:** IULIANO, Antonio (INFN - National Institute for Nuclear Physics)

**Session Classification:** Session

Contribution ID: 177

Type: **not specified**

## **Combining leading one-loop electroweak corrections with NLO QCD+parton shower precision**

*Thursday, 9 May 2024 16:45 (10 minutes)*

**Presenter:** VITOS, Timea

**Session Classification:** Session

Contribution ID: 178

Type: **not specified**

## **Measurement of 4ljj production using 140 fb<sup>-1</sup> of proton-proton collision data at sqrt(s)=13 TeV with the ATLAS detector**

*Thursday, 9 May 2024 16:55 (10 minutes)*

**Presenter:** D'UFFIZI, Matteo (University of Manchester (GB))

**Session Classification:** Session



Contribution ID: **180**

Type: **not specified**

## **SOCIAL DINNER**

*Thursday, 9 May 2024 20:00 (2 hours)*

Contribution ID: **181**

Type: **not specified**

## Conclusion of the Workshop

*Friday, 10 May 2024 18:00 (10 minutes)*

**Presenter:** CAMPANELLI, Mario (UCL)