

# Caroline Collard

## List of Publications by Year in descending order

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Version: 2024-02-01

111  
papers

5,429  
citations

101543

36  
h-index

82547

72  
g-index

113  
all docs

113  
docs citations

113  
times ranked

6766  
citing authors

| # | ARTICLE  | IF  | CITATIONS |
|---|--|-----|-----------|
| 1 | Precise determination of the mass of the Higgs boson and tests of compatibility of its couplings with the standard model predictions using proton collisions at 7 and 8 TeV. European Physical Journal C, 2015, 75, 212. | 3.9 | 541       |
| 2 | Event generator tunes obtained from underlying event and multiparton scattering measurements. European Physical Journal C, 2016, 76, 155.  | 3.9 | 499       |
| 3 | Observation of the diphoton decay of the Higgs boson and measurement of its properties. European Physical Journal C, 2014, 74, 3076.   | 3.9 | 342       |
| 4 | Observation of a new boson with mass near 125 GeV in pp collisions at $\sqrt{s}=7$ and 8 TeV. Journal of High Energy Physics, 2013, 2013, 1.   | 4.7 | 320       |
| 5 | Extraction and validation of a new set of CMS pythia8 tunes from underlying-event measurements. European Physical Journal C, 2020, 80, 4.  | 3.9 | 198       |

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| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 19 | Measurement of the $\sigma(\text{pp} \rightarrow \text{t}\bar{\text{t}})$ production cross section, the top quark mass, and the strong coupling constant using dilepton events in pp collisions at. European Physical Journal C, 2019, 79, 368.   | 3.9 | 68        |
| 20 | Search for new physics in same-sign dilepton events in proton-proton collisions at $\sqrt{s} = 13, \text{ext } \{\text{TeV}\}$ $s = 13 \text{ TeV}$ . European Physical Journal C, 2016, 76, 439.   | 3.9 | 64        |
| 21 | Search for electroweak production of charginos and neutralinos in multilepton final states in proton-proton collisions at $\sqrt{s}=13 \text{ TeV}$ . Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 63        |
| 22 | Measurement of differential cross sections for Higgs boson production in the diphoton decay channel in pp collisions at $\sqrt{s}=8, \text{ext } \{\text{TeV}\}$ $s = 8 \text{ TeV}$ . European Physical Journal C, 2016, 76, 13.   | 3.9 | 62        |
| 23 | Measurement of the inelastic proton-proton cross section at $\sqrt{s}=13 \text{ TeV}$ . Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 62        |
| 24 | Measurements of Higgs boson properties in the diphoton decay channel in proton-proton collisions at $\sqrt{s}=13 \text{ TeV}$ . Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 57        |
| 25 | Measurement of the double-differential inclusive jet cross section in proton-proton collisions at $\sqrt{s} = 13, \text{ext } \{\text{TeV}\}$ $s = 13 \text{ TeV}$ . European Physical Journal C, 2016, 76, 451.  | 3.9 | 55        |
| 26 | Measurement and QCD analysis of double-differential inclusive jet cross sections in pp collisions at $s = 8 \sqrt{s}=8 \text{ TeV}$ and cross section ratios to 2.76 and 7 TeV. Journal of High Energy Physics, 2017, 2017, 1.  | 4.7 | 54        |
| 27 | Measurements of the $\sigma(\text{pp} \rightarrow \text{Z}\gamma)$ production cross section and the $\text{BR}(\text{Z} \rightarrow 4\ell)$ branching fraction, and constraints on anomalous triple gauge couplings at. European Physical Journal C, 2018, 78, 165.                             | 3.9 | 52        |
| 28 | Search for the associated production of the Higgs boson with a top-quark pair. Journal of High Energy Physics, 2014, 2014, 1.   | 4.7 | 51        |
| 29 | Measurement of pseudorapidity distributions of charged particles in proton-proton collisions at $\sqrt{s} = 8 \text{ TeV}$ by the CMS and TOTEM experiments. European Physical Journal C, 2014, 74, 1.  | 3.9 | 49        |
| 30 | Identification techniques for highly boosted W bosons that decay into hadrons. Journal of High Energy Physics, 2014, 2014, 1.   | 4.7 | 43        |
| 31 | Measurement of the $\sigma(\text{pp} \rightarrow \text{t}\bar{\text{t}})$ production cross section in the $\ell\bar{\ell}\gamma$ channel in proton-proton collisions at $s = 7 \sqrt{s}=7 \text{ TeV}$ and 8 TeV. Journal of High Energy Physics, 2016, 2016, 1.                                | 4.7 | 41        |
| 32 | Measurement of the Higgs boson production rate in association with top quarks in final states with electrons, muons, and hadronically decaying tau leptons at $\sqrt{s} = 13, \text{ext } \{\text{TeV}\}$ $s = 13 \text{ TeV}$ . European Physical Journal C, 2021, 81, 378.                    | 3.9 | 40        |
| 33 | Measurement of the ZZ production cross section and search for anomalous couplings in $2\gamma, 2\ell, \ell\ell$ final states in pp collisions at $\sqrt{s}=7 \text{ TeV}$ . Journal of High Energy Physics, 2013, 2013, 1.  | 4.7 | 39        |
| 34 | Measurement of differential cross sections for $\sigma(\text{pp} \rightarrow \text{Z} + \text{jets})$ Z boson production in association with jets in proton-proton collisions at $\sqrt{s} = 13, \text{ext } \{\text{TeV}\}$ $s = 13 \text{ TeV}$ . European Physical Journal C, 2018, 78, 965. | 3.9 | 39        |
| 35 | Search for heavy resonances that decay into a vector boson and a Higgs boson in hadronic final states at $\sqrt{s} = 13 \text{ TeV}$ . European Physical Journal C, 2017, 77, 636.  | 3.9 | 38        |
| 36 | Evidence for associated production of a Higgs boson with a top quark pair in final states with electrons, muons, and hadronically decaying $\ell$ , leptons at $\sqrt{s}=13 \text{ TeV}$ . Journal of High Energy Physics, 2018, 2018, 1.   | 4.7 | 38        |

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|----|---|-----|-----------|
| 37 | Measurements of production cross sections of the Higgs boson in the four-lepton final state in proton-proton collisions at $\sqrt{s} = 13, \text{ext } \{\text{TeV}\}$ . European Physical Journal C, 2021, 81, 488.                                    | 3.9 | 35        |
| 38 | Search for dark matter produced in association with a leptonically decaying $\mathbb{Z}$ boson in proton-proton collisions at $\sqrt{s}=13, \text{ext } \{\text{TeV}\}$ . European Physical Journal C, 2021, 81, 13.                                    | 3.9 | 33        |
| 39 | Search for top squark pair production using dilepton final states in $\text{ext } \{p\}\text{-ext } \{p\}$ collision data collected at $\sqrt{s}=13, \text{ext } \{\text{TeV}\}$ . European Physical Journal C, 2021, 81, 3.                            | 3.9 | 33        |
| 40 | Measurements of the $\mathbb{Z} \mathbb{Z}$ production cross sections in the $2u \ 2l \ 2\ 1/2$ channel in proton-proton collisions at $\sqrt{s} = 7 \ \text{TeV}$ and $8 \ \text{TeV}$ . European Physical Journal C, 2015, 75, 511.                   | 3.9 | 32        |
| 41 | Searches for pair production of third-generation squarks in $\sqrt{s}=13 \ \text{TeV}$ pp collisions. European Physical Journal C, 2017, 77, 327.   | 3.9 | 32        |
| 42 | Shape, transverse size, and charged-hadron multiplicity of jets in pp collisions at $\sqrt{s}=7 \ \text{TeV}$ . Journal of High Energy Physics, 2012, 2012, 1.  | 4.7 | 31        |
| 43 | Search for top squark pair production in pp collisions at $\sqrt{s} = 13 \ \text{TeV}$ using single lepton events. Journal of High Energy Physics, 2017, 2017, 1.   | 4.7 | 31        |
| 44 | Search for light bosons in decays of the 125 GeV Higgs boson in proton-proton collisions at $\sqrt{s} = 8 \ \text{TeV}$ . Journal of High Energy Physics, 2017, 2017, 1.  | 4.7 | 29        |
| 45 | Search for dark matter produced in association with a Higgs boson decaying to a pair of bottom quarks in proton-proton collisions at $\sqrt{s}=13, \text{ext } \{\text{TeV}\}$ . European Physical Journal C, 2019, 79, 280.                            | 3.9 | 29        |
| 46 | Search for $\overline{t}t\text{H}$ production in the $\text{H} \rightarrow \overline{b}b$ decay channel with leptonic $\overline{t}t$ decays in proton-proton collisions at $\sqrt{s}=13 \ \text{TeV}$ . Journal of High Energy Physics, 2019, 2019, 1. | 4.7 | 28        |
| 47 | Measurements of differential Z boson production cross sections in proton-proton collisions at $\sqrt{s} = 13 \ \text{TeV}$ . Journal of High Energy Physics, 2019, 2019, 1.   | 4.7 | 28        |
| 48 | Search for new physics in events with a leptonically decaying Z boson and a large transverse momentum imbalance in proton-proton collisions at $\sqrt{s} = 13 \ \text{TeV}$ . European Physical Journal C, 2018, 78, 291.                               | 3.9 | 27        |
| 49 | Performance of the reconstruction and identification of high-momentum muons in proton-proton collisions at $\sqrt{s} = 13 \ \text{TeV}$ . Journal of Instrumentation, 2020, 15, P02027-P02027.  | 1.2 | 27        |
| 50 | Measurements of Higgs boson production cross sections and couplings in the diphoton decay channel at $\sqrt{s} = 13 \ \text{TeV}$ . Journal of High Energy Physics, 2021, 2021, 1.  | 4.7 | 27        |
| 51 | Measurement of energy flow at large pseudorapidities in pp collisions at $\sqrt{s} = 0.9 \ \text{TeV}$ and $7 \ \text{TeV}$ . Journal of High Energy Physics, 2011, 2011, 1.  | 4.7 | 25        |
| 52 | Search for high-mass resonances in final states with a lepton and missing transverse momentum at $\sqrt{s}=13 \ \text{TeV}$ . Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 25        |
| 53 | The CMS Phase-1 pixel detector upgrade. Journal of Instrumentation, 2021, 16, P02027-P02027.  | 1.2 | 25        |
| 54 | Measurements of $pp \rightarrow \mathbb{Z} \mathbb{Z}$ production cross sections and constraints on anomalous triple gauge couplings at $\sqrt{s} = 13, \text{ext } \{\text{TeV}\}$ . European Physical Journal C, 2021, 81, 200.                       | 3.9 | 24        |

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 55 | Search for direct production of supersymmetric partners of the top quark in the all-jets final state in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2017, 2017, 1.                                 | 4.7 | 22        |
| 56 | A Deep Neural Network for Simultaneous Estimation of b Jet Energy and Resolution. Computing and Software for Big Science, 2020, 4, 10.  | 2.9 | 21        |
| 57 | Search for direct top squark pair production in events with one lepton, jets, and missing transverse momentum at 13 TeV with the CMS experiment. Journal of High Energy Physics, 2020, 2020, 1.                                       | 4.7 | 21        |
| 58 | Search for $\overline{t}tH$ production in the all-jet final state in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 20        |
| 59 | Search for dark matter in events with energetic, hadronically decaying top quarks and missing transverse momentum at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 20        |
| 60 | Measurement of top quark pair production in association with a Z boson in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2020, 2020, 1.   | 4.7 | 20        |
| 61 | Measurement of differential and integrated fiducial cross sections for Higgs boson production in the four-lepton decay channel in pp collisions at $\sqrt{s}=7$ and 8 TeV. Journal of High Energy Physics, 2016, 2016, 1.             | 4.7 | 19        |
| 62 | Search for a very light NMSSM Higgs boson produced in decays of the 125 GeV scalar boson and decaying into $\tilde{l}, \tilde{\nu}_\tau$ leptons in pp collisions at $\sqrt{s}=8$ TeV. Journal of High Energy Physics, 2016, 2016, 1. | 4.7 | 19        |
| 63 | Search for charged Higgs bosons produced in vector boson fusion processes and decaying into vector boson pairs in proton-proton collisions at $\sqrt{s}=13$ TeV. European Physical Journal C, 2021, 81, 723.                          | 3.9 | 19        |
| 64 | Measurement of the differential Drell-Yan cross section in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2019, 2019, 1.  | 4.7 | 18        |
| 65 | MUSIC: a model-unspecific search for new physics in proton-proton collisions at $\sqrt{s}=13$ TeV. European Physical Journal C, 2021, 81, 629.  | 3.9 | 18        |
| 66 | Combined searches for the production of supersymmetric top quark partners in proton-proton collisions at $\sqrt{s}=13$ TeV. European Physical Journal C, 2021, 81, 970.   | 3.9 | 18        |
| 67 | Search for low-mass dilepton resonances in Higgs boson decays to four-lepton final states in proton-proton collisions at $\sqrt{s}=13$ TeV. European Physical Journal C, 2022, 82, 290.   | 3.9 | 18        |
| 68 | Probing color coherence effects in pp collisions at $\sqrt{s}=7$ TeV. European Physical Journal C, 2014, 74, 2901.  | 3.9 | 17        |
| 69 | Search for $Z\tilde{t}^3$ resonances using leptonic and hadronic final states in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 17        |
| 70 | Measurement of charged particle spectra in minimum-bias events from proton-proton collisions at $\sqrt{s}=13$ TeV. European Physical Journal C, 2018, 78, 697.  | 3.9 | 17        |
| 71 | Search for dark matter produced in association with a single top quark or a top quark pair in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2019, 2019, 1.   | 4.7 | 17        |
| 72 | Measurement of the $t\bar{t}\tilde{A}^-$ production cross section using events with one lepton and at least one jet in pp collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2017, 2017, 1.                             | 4.7 | 15        |

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|----|--|-----|-----------|
| 73 | Search for black holes and sphalerons in high-multiplicity final states in proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.   | 4.7 | 14        |
| 74 | Measurements of the $pp \rightarrow WZ$ inclusive and differential production cross sections and constraints on charged anomalous triple gauge couplings at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2019, 2019, 1.        | 4.7 | 14        |
| 75 | Mixed higher-order anisotropic flow and nonlinear response coefficients of charged particles in $\sqrt{s_{NN}} = 2.76$ and $5.02$ TeV collisions at $\sqrt{s_{NN}} = 2.76$ and $5.02$ TeV. European Physical Journal C, 2020, 80, 534. | 3.9 | 14        |
| 76 | Search for dark matter particles produced in association with a Higgs boson in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2020, 2020, 1.   | 4.7 | 14        |
| 77 | Search for long-lived particles decaying to leptons with large impact parameter in proton-proton collisions at $\sqrt{s} = 13$ TeV. European Physical Journal C, 2022, 82, 153.  | 3.9 | 14        |
| 78 | Search for the associated production of a Higgs boson with a single top quark in proton-proton collisions at $\sqrt{s} = 8$ TeV. Journal of High Energy Physics, 2016, 2016, 1.  | 4.7 | 13        |
| 79 | Measurement of the underlying event activity in inclusive Z boson production in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 13        |
| 80 | Measurements of differential cross sections of top quark pair production as a function of kinematic event variables in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.                 | 4.7 | 13        |
| 81 | Search for supersymmetry in final states with two or three soft leptons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.                             | 4.7 | 13        |
| 82 | Search for decays of stopped exotic long-lived particles produced in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.   | 4.7 | 12        |
| 83 | Search for dark matter produced in association with a Higgs boson decaying to $\tilde{\chi}_1^0$ or $\tilde{\chi}_1^\pm$ at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 12        |
| 84 | Search for heavy resonances decaying into two Higgs bosons or into a Higgs boson and a W or Z boson in proton-proton collisions at 13 TeV. Journal of High Energy Physics, 2019, 2019, 1.  | 4.7 | 12        |
| 85 | Development and validation of HERWIG tunes from CMS underlying-event measurements. European Physical Journal C, 2021, 81, 312.   | 3.9 | 12        |
| 86 | Search for a right-handed W boson and a heavy neutrino in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.  | 4.7 | 12        |
| 87 | Search for heavy resonances decaying into a vector boson and a Higgs boson in final states with charged leptons, neutrinos and b quarks at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.                         | 4.7 | 11        |
| 88 | Search for a heavy resonance decaying into a Z boson and a vector boson in the $u\bar{u}q\bar{q}$ final state. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 10        |
| 89 | Search for a heavy vector resonance decaying to a $Z$ boson and a Higgs boson in proton-proton collisions at $\sqrt{s} = 13$ TeV. European Physical Journal C, 2021, 81, 688.  | 3.9 | 9         |
| 90 | Search for a heavy resonance decaying into a Z boson and a Z or W boson in $2q$ final states at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2018, 2018, 1.  | 4.7 | 8         |

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|-----|--|-----|-----------|
| 91  | Search for direct pair production of scalar top quarks in the single- and dilepton channels in proton-proton collisions at $\sqrt{s} = 8$ TeV. Journal of High Energy Physics, 2016, 2016, 1.  | 4.7 | 7         |
| 92  | Search for the associated production of the Higgs boson with a top-quark pair. , 2014, 2014, 1.  |     | 6         |
| 93  | Inclusive and differential cross section measurements of single top quark production in association with a Z boson in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.                                | 4.7 | 6         |
| 94  | Search for heavy resonances decaying to ZZ or ZW and axion-like particles mediating nonresonant ZZ or ZH production at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.   | 4.7 | 6         |
| 95  | Search for the pair production of light top squarks in the $e^+e^- \rightarrow t\bar{t}$ final state in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2019, 2019, 1.  | 4.7 | 5         |
| 96  | Measurement of energy flow at large pseudorapidities in pp collisions at ( $\sqrt{s} = 0.9$ ) and 7 TeV. , 2011, 2011, 1.  |     | 5         |
| 97  | Measurement of single-diffractive dijet production in proton-proton collisions at $\sqrt{s} = 8$ , ext {TeV} ext {V} with the CMS and TOTEM experiments. European Physical Journal C, 2020, 80, 1164.  | 3.9 | 5         |
| 98  | Search for flavor-changing neutral current interactions of the top quark and the Higgs boson decaying to a bottom quark-antiquark pair at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.  | 4.7 | 5         |
| 99  | Search for long-lived particles decaying into muon pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV collected with a dedicated high-rate data stream. Journal of High Energy Physics, 2022, 2022, .  | 4.7 | 5         |
| 100 | Measurement and QCD analysis of double-differential inclusive jet cross sections in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.  | 4.7 | 5         |
| 101 | Search for electroweak production of charginos and neutralinos in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.  | 4.7 | 5         |
| 102 | Search for higgsinos decaying to two Higgs bosons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, .  | 4.7 | 4         |
| 103 | Measurements of the $(p) \rightarrow (Z) \rightarrow 4\ell$ production cross section and the $(Z) \rightarrow 4\ell$ branching fraction, and constraints on anomalous triple gauge couplings at $(\sqrt{s} = 13, \text{ext {TeV}})$ . , 2018, 78, 1. |     | 3         |
| 104 | Measurements of angular distance and momentum ratio distributions in three-jet and $\{Z\}$ + two-jet final states in $\{p\}\{p\}$ collisions. European Physical Journal C, 2021, 81, 852.  | 3.9 | 2         |
| 105 | Search for a heavy resonance decaying into a top quark and a W boson in the lepton+jets final state at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.   | 4.7 | 2         |
| 106 | Measurement of the inclusive $\overline{t}t$ production cross section in proton-proton collisions at $\sqrt{s} = 5.02$ TeV. Journal of High Energy Physics, 2022, 2022, 1.   | 4.7 | 2         |
| 107 | Search for heavy resonances decaying to a pair of Lorentz-boosted Higgs bosons in final states with leptons and a bottom quark pair at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, .  | 4.7 | 2         |
| 108 | Study of dijet events with large rapidity separation in proton-proton collisions at $\sqrt{s} = 2.76$ TeV. Journal of High Energy Physics, 2022, 2022, 1.  | 4.7 | 1         |

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|-----|---|-----|-----------|
| 109 | Observation of $B^0 \rightarrow \psi(2S)K^0_{\text{charm}} \psi^+ \psi^-$ and $B^0_{\text{charm}} \rightarrow \psi(2S)K^0_{\text{charm}} \psi^+ \psi^-$ decays. European Physical Journal C, 2022, 82, .  | 3.9 | 1         |
| 110 | Electronic calibration of the ATLAS LAr calorimeter. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 623, 246-248. | 1.6 | 0         |
| 111 | DIFFRACTION AT HERA. , 2003, , .  |     | 0         |