

# List of all publications

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## Selected

1. L. Bianchini et al. [CMS Collaboration] “Evidence for the Higgs boson decay to a bottom quark-antiquark pair”, submitted to *Phys. Lett. B* [arXiv:1709.07497](https://arxiv.org/abs/1709.07497) [hep-ex], CMS-HIG-16-044, CERN-EP-2017-233 (2017).
2. L. Bianchini et al., “Reconstruction of the Higgs mass in events with Higgs bosons decaying into a pair of tau leptons using matrix element techniques”, *Nucl. Instrum. Meth. A* **862** 54-84 (2017), [arXiv:1603.05910](https://arxiv.org/abs/1603.05910) [hep-ex] (2016), [dx.doi.org/10.1016/j.nima.2017.05.001](https://dx.doi.org/10.1016/j.nima.2017.05.001).
3. L. Bianchini et al. [CMS Collaboration], “Search for a standard model Higgs boson produced in association with a top-quark pair and decaying to bottom quarks using a matrix element method”, *Eur. Phys. J. C* **75** (2015) 251, [arXiv:1502.02485](https://arxiv.org/abs/1502.02485) [hep-ex] (2015), [dx.doi.org/10.1140/epjc/s10052-015-3454-1](https://dx.doi.org/10.1140/epjc/s10052-015-3454-1).
4. L. Bianchini et al. [CMS Collaboration], “Evidence for the 125 GeV Higgs boson decaying to a pair of tau leptons”, *JHEP* **05** (2014) 104, [arXiv:1401.5041](https://arxiv.org/abs/1401.5041) [hep-ex], [link.springer.com/article/10.1007/JHEP05\(2014\)104](https://link.springer.com/article/10.1007/JHEP05(2014)104).

I am co-author of more than 500 scientific publications, in large part as member of the CMS Collaboration (2009 – present). For the latter, I am listing below those for which I gave the most important contribution by authoring at least one related internal note. A complete list of my publications can be found at [inspirehep.net/author/L.Bianchini.1](https://inspirehep.net/author/L.Bianchini.1)

1. L. Bianchini et al. [CMS Collaboration] “Evidence for the Higgs boson decay to a bottom quark-antiquark pair”, submitted to *Phys. Lett. B* [arXiv:1709.07497](#) [hep-ex], CMS-HIG-16-044, CERN-EP-2017-233 (2017).
2. L. Bianchini et al. [CMS Collaboration] “Search for a narrow heavy resonance decaying to bottom quark-antiquark pairs at  $\sqrt{s} = 13$ ”, CMS Physics Analysis Summary, CMS-PAS-HIG-16-025 (2016).
3. L. Bianchini, M. Pinamonti, “Higgs boson with top quarks: searches and measurements from the LHC”, *PoS(PP@LHC2016)013* (2016),
4. L. Bianchini, B. Calpas, J. Conway, A. Fowlie, L. Marzola, C. Veelken, “Reconstruction of the Higgs mass in events with Higgs bosons decaying into a pair of tau leptons using matrix element techniques”, *Nucl. Instrum. Meth. A* **862** 54-84 (2017), [arXiv:1603.05910](#) [hep-ex] (2016).
5. L. Bianchini et al. [CMS Collaboration], “Search for  $t\bar{t}H$  production in the  $H \rightarrow b\bar{b}$  decay channel with  $\sqrt{s} = 13$  TeV  $pp$  collisions in the CMS experiment”, CMS-PAS-HIG-16-004 (2016), [inspirehep.net/record/2139578](#).
6. L. Bianchini, “Higgs boson plus heavy flavour: searches and measurements from the LHC Run 1”, to appear in *AIP Conference Proceedings* (2016).
7. L. Bianchini et al., “Performance of a tungsten-cerium fluoride sampling calorimeter in high-energy electron beam tests”, *Nucl. Instrum. Meth. A* **804** (2015) 79-83, [arXiv:1506.02604](#) [ins-det].
8. L. Bianchini “Search for Higgs boson production in association with top quarks in the CMS detector”, *Nuclear and Particle Physics Proceedings* (2016), pp. 884-889.
9. L. Bianchini et al. [CMS Collaboration], “Search for a standard model Higgs boson produced in association with a top-quark pair and decaying to bottom quarks using a matrix element method”, *Eur. Phys. J. C* **75** (2015) 251, [arXiv:1502.02485](#) [hep-ex].
10. G. Grasseau, D. Chamont, F. Beaudette, L. Bianchini, O. Davignon, L. Mastrolorenzo, C. Ochando, P. Paganini, T. Strebler, “Matrix element method for high performance computing platforms”, *J. Phys.: Conf. Ser.* **664** (2015) 092009
11. L. Bianchini et al. [CMS Collaboration], “Evidence for the direct decay of the 125 GeV Higgs boson to fermions”, *Nature Physics* **10** (2014) 557, [arXiv:1401.5041](#) [hep-ex].

12. L. Bianchini et al. [CMS Collaboration], “Evidence for the 125 GeV Higgs boson decaying to a pair of tau leptons”, *JHEP* **05** (2014) 104, arXiv:1401.5041 [hep-ex].
13. L. Bianchini, J. Conway, E. Friis, C. Veelken, “Reconstruction of the Higgs mass in  $H$  to tau tau events by Dynamical Likelihood techniques”, *J. Phys.: Conf. Ser.* **513** (2014) 022035,
14. L. Bianchini et al. [CMS Collaboration], “Observation of a new boson with mass near 125 GeV in  $pp$  collisions at  $\sqrt{s}=7$  and 8 TeV”, *JHEP* **06** (2013) 081, arXiv:1303.4571 [hep-ex].
15. L. Bianchini, “Search for the Standard Model Higgs boson decaying to tau leptons with the CMS experiment at LHC”, CERN-THESIS-2012-347, [inspirehep.net/record/1231280](http://inspirehep.net/record/1231280), PhD thesis (2012).
16. L. Bianchini et al. [CMS Collaboration], “Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC”, *Phys. Lett. B* **716** (2012) 30, arXiv:1207.7235 [hep-ex].
17. L. Bianchini et al. [CMS Collaboration], “A New Boson with a Mass of 125 GeV Observed with the CMS Experiment at the Large Hadron Collider”, *Science* **338** (2012) 1569-1575, .
18. L. Bianchini, “Search for the SM Higgs boson in  $b\bar{b}$ ,  $\tau\tau$ , WW, ZZ with 4.7/fb of CMS data”, *SLAC eConf C1206043* (2103).
19. L. Bianchini et al. [CMS Collaboration], “Search for Neutral Higgs Bosons Decaying to Tau Pairs in  $pp$  Collisions at  $\sqrt{s}=7$  TeV”, *Phys. Lett. B* **713** (2012) 68, arXiv:1202.4083 [hep-ex].
20. L. Bianchini et al. [CMS Collaboration], “Combined results of searches for the standard model Higgs boson in  $pp$  collisions at  $\sqrt{s}=7$  TeV”, *Phys. Lett. B* **710** (2012) 26, arXiv:1202.1488 [hep-ex].
21. L. Bianchini et al. [CMS Collaboration], “Performance of tau-lepton reconstruction and identification in CMS”, *JINST* **7** (2012) P01001, arXiv:1109.6034 [physics.ins-det].
22. L. Bianchini et al. [CMS Collaboration], “Search for Neutral MSSM Higgs Bosons Decaying to Tau Pairs in  $pp$  Collisions at  $\sqrt{s}=7$  TeV”, *Phys.Rev.Lett.* **106** (2011) 231801, arXiv:1104.1619 [hep-ex].

23. L. Bianchini et al. [CMS Collaboration], “*Measurement of the Inclusive Z Cross Section via Decays to Tau Pairs in pp Collisions at  $\sqrt{s}=7$  TeV*”, *JHEP* **08** (2011) 117, [arXiv:1104.1617](#) [hep-ex].
24. L. Bianchini et al. [CMS Collaboration], “*Commissioning of the Particle-flow Event Reconstruction with the first LHC collisions recorded in the CMS detector*”, CMS-PAS-PFT-10-001 (2010), [inspirehep.net/record/925318](#).
25. L. Bianchini et al. [CMS Collaboration], “*Precise Mapping of the Magnetic Field in the CMS Barrel Yoke using Cosmic Rays*”, *JINST* **5** (2010) T03021, [arXiv:0910.5530](#) [physics.ins-det].
26. L. Bianchini, A. Fasano, “*A model combining acid-mediated tumour invasion and nutrient dynamics*”, *Nonlinear Analysis: Real World Appl.*, Vol. **10** (2009) 1955–1975.