

Fabien TARRADE

Publications list

A full publication list can be found at <http://people.physics.carleton.ca/~ftarrade/publications.html> with URL links for the most important publications.

The entire ATLAS collaboration (“ATLAS Coll.”) signs the ATLAS publications and not only the colleagues who made important contributions to the specific analysis.

I have identified below the papers where I have made substantial contributions

ATLAS conference notes are preliminary results released by the Collaboration to be presented in conferences, and they are reviewed in 3 steps inside the ATLAS collaboration: by a dedicated editorial board of 3 or 4 ATLAS members, by the physics working group (i.e Higgs group) and finally by the ATLAS collaboration, thus ensuring their high quality.

The role of an editor consists in organising the work, to follow the results produced by more than hundred contributors and to write the document. It also requires interaction and discussion with the physics conveners, the ATLAS collaboration and finally with the referees.

Co-convenor of the ATLAS Higgs sub-group (HSG2):

papers :

[87] ATLAS Coll., “*Measurement of the Higgs boson mass from the $H \rightarrow \gamma\gamma$ and $H \rightarrow ZZ^{(*)} \rightarrow 4l$ channels with the ATLAS detector using 25 fb^{-1} of pp collision data*”.

ATLAS paper, Phys. Rev. D (2014).

[86] ATLAS Coll., “*Measurements of Higgs boson production and couplings in the four-lepton channel in pp collisions at center-of-mass energies of 7 and 8 TeV with the ATLAS detector*”.

ATLAS paper, Phys. Rev. D (2014).

[85] ATLAS Coll., “*Fiducial and differential cross sections of Higgs boson production measured in the four-lepton decay channel in pp collisions at a centre-of-mass energy of 8 TeV with the ATLAS detector*”.

ATLAS paper, Phys. Lett. B (2014).

[84] ATLAS Coll., “*Search for invisible decays of a Higgs boson produced in association with a Z boson in ATLAS*”.

ATLAS paper, Phys. Rev. Lett. 112. (2012) 20180.

conference notes :

[83] ATLAS Coll., “***Fiducial and differential cross sections of Higgs boson production measured in the four-lepton decay channel in pp collisions at a centre-of-mass energy of 8 TeV with the ATLAS detector***”.

ATLAS conf note (International Conference on High Energy Physics, 2014), ATLAS-CONF-2014-044 (2014).

[82] ATLAS Coll., “***Determination of the off-shell Higgs boson signal strength in the high-mass ZZ final state with the ATLAS detector***”.

ATLAS conf note (International Conference on High Energy Physics, 2014), ATLAS-CONF-2014-042 (2014).

Editor:

papers :

[81] ATLAS Coll., “***Search for the Standard Model Higgs boson in the decay channel H to $ZZ^{(*)}$ to $4l$ with 4.8 fb^{-1} of pp collisions at $\sqrt{s}=7 \text{ TeV}$*** ”.

ATLAS paper (CERN seminar 2011), Phys. Lett. B710 (2012) 383-402. *Co-editor.*

[80] ATLAS Coll., “***Search for the Standard Model Higgs boson in the decay channel $H \rightarrow ZZ^{(*)} \rightarrow 4l$ with the ATLAS detector***”.

ATLAS paper (Lepton Photon 2011 conference), Phys. Lett. B 705 (2011) 435- 451. *Co-editor.*

conference notes :

[79] ATLAS Coll., “***Measurements of the properties of the Higgs-like boson in the four lepton decay channel with the ATLAS detector using 25 fb^{-1} of proton-proton collision data***”.

ATLAS conf note (Moriond conference 2013), ATLAS-CONF-2013-013 (2013). *Co-editor.*

[78] ATLAS Coll., “***Updated results and measurements of properties of the new Higgs-like particle in the four lepton decay channel with the ATLAS detector***”.

ATLAS conf note (HCP conference 2012), ATLAS-CONF-2012-169 (2012). *Co-editor.*

[77] ATLAS Coll., “***Search for the Standard Model Higgs boson in the decay channel H to $ZZ^{(*)}$ to $4l$ with 4.8 fb^{-1} of pp collisions at $\sqrt{s}=7 \text{ TeV}$*** ”.

ATLAS conf note (CERN seminar 2011), ATLAS-CONF-2011-162 (2011). *Co-editor.*

[76] ATLAS Coll., “***Search for the Standard Model Higgs boson in the decay channel H to $ZZ^{(*)}$ to $4l$ with 2.1 fb^{-1} of pp collisions at $\sqrt{s}=7 \text{ TeV}$*** ”.

ATLAS conf note (Lepton Photon 2011 conference), temporary Conf Note (2011). *Co-editor.*

[75] ATLAS Coll., “***Search for the Standard Model Higgs boson in the decay channel H to $ZZ^{(*)}$ to $4l$ with 1.0 fb^{-1} of pp collisions at $\sqrt{s}=7 \text{ TeV}$*** ”.

ATLAS conf note (EPS 2011 conference), ATLAS-CONF-2011-131 (2011). *Co-editor.*

Primary author:

papers :

[74] ATLAS Coll., “**Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC**”.

ATLAS paper (Moriond conference 2013 summary paper), Phys. Lett. B 726 (2013) 88-119.

[73] ATLAS Coll., “**Evidence for the spin-0 nature of the Higgs boson using ATLAS data**”.

ATLAS, paper (Moriond conference 2013 summary paper), Phys. Lett. B 726 (2013) 120-144.

[72] ATLAS Coll., “**The Higgs Boson**”.

ATLAS paper, Science, Vol 338 December 21th (2012).

[71] ATLAS Coll., “**Observation of a New Particle in the Search for the Standard Model Higgs Boson with the ATLAS Detector at the LHC**”.

ATLAS paper (CERN seminar July 2012, Discovery paper), Phys. Lett. B 716 (2012) 1-29.

[70] ATLAS Coll., “**Combination of Higgs Boson Searches with up to 4.9 fb⁻¹ of pp Collision Data Taken at $\sqrt{s}=7$ TeV with the ATLAS Experiment at the LHC**”.

ATLAS paper, Phys. Lett. B710 (2012) 49-66.

[69] ATLAS Coll., “**Limits on the production of the Standard Model Higgs Boson in pp collisions at $\sqrt{s}=7$ TeV with the ATLAS detector**”.

ATLAS paper, ATLAS paper, Eur. Phys. J. C 71 (2011) 1728.

[68] ATLAS Coll., “**Measurement of the $W \rightarrow lv$ and $Z \rightarrow ll$ production cross sections in proton-proton collisions at $\sqrt{s}=7$ TeV with the ATLAS detector**”.

ATLAS paper, JHEP 1012 (2010) 060.

[67] ATLAS Coll., “**Measurement of the response of the ATLAS liquid argon barrel calorimeter to electrons at the 2004 combined test-beam**”.

ATLAS paper, Nuclear Inst. and Methods in Physics Research, A 614 (2010), p400-432.

conference notes :

[66] ATLAS Coll., “**ATLAS measurements of the 7 and 8 TeV cross sections for $Z \rightarrow 4l$ in pp collisions**”.

ATLAS conf note, ATLAS-CONF-2013-055 (2013).

[65] ATLAS Coll., “**Study of the spin of the new boson with up to 25 fb⁻¹ of ATLAS data**”.

ATLAS conf note (Moriond conference 2013), ATLAS-CONF-2013-040 (2013).

[64] ATLAS Coll., “**Combined coupling measurements of the Higgs-like boson with the ATLAS detector using up to 25 fb⁻¹ of proton-proton collision data**”.

ATLAS conf note (Moriond conference 2013), ATLAS-CONF-2013-034 (2013).

[63] ATLAS Coll., “**Combined measurements of the mass and signal strength of the Higgs-like boson with the ATLAS detector using up to 25 fb^{-1} of proton-proton collision data**”.

ATLAS conf note (Moriond conference 2013), ATLAS-CONF-2013-014 (2013).

[62] ATLAS Coll., “**An update of combined measurements of the new Higgs-like boson with high mass resolution channels**”.

ATLAS conf note (HCP conference 2012), ATLAS-CONF-2012-170 (2012).

[61] ATLAS Coll., “**Observation of an Excess of Events in the Search for the Standard Model Higgs boson with the ATLAS detector at the LHC**”.

ATLAS conf note (CERN seminar, ICHEP July 2012, Discovery conf note), ATLAS-CONF-2012-093 (2012).

[60] ATLAS Coll., “**Observation of an excess of events in the search for the Standard Model Higgs boson in the H to $ZZ^{(*)}$ to $4l$ channel with the ATLAS detector of pp collisions at $\sqrt{s}=7 \text{ TeV}$ ”.**

ATLAS conf note (CERN seminar July, ICHEP 2012, Discovery conf note), ATLAS-CONF-2012-092 (2012).

[59] ATLAS Coll., “**Combination of Higgs Boson Searches with up to 4.9 fb^{-1} of pp Collision Data Taken at $\sqrt{s}=7 \text{ TeV}$ with the ATLAS Experiment at the LHC**”.

ATLAS note, ATLAS-CONF-2011-163 (2011).

[58] ATLAS and CMS Coll., “**Combined Standard Model Higgs boson searches with up to 2.3 fb^{-1} of pp collisions at $\sqrt{s}=7 \text{ TeV}$ at the LHC**”.

ATLAS-CMS note, ATLAS-CONF-2011-157 (2011).

[57] ATLAS Coll., “**Update of the Combination of Higgs Boson Searches in 1.0 to 2.3 fb^{-1} of pp Collisions Data Taken at $\sqrt{s}=7 \text{ TeV}$ with the ATLAS Experiment at the LHC**”.

ATLAS note, ATLAS-CONF-2011-135 (2011).

[56] ATLAS and CMS Coll., “**Procedure for the LHC Higgs boson search combination in summer 2011**”.

ATLAS-CMS note, ATL-PHYS-PUB-2011-011 (2011).

[55] ATLAS Coll., “**Combination of the Searches for the Higgs Boson in $\sim 1 \text{ fb}^{-1}$ of Data Taken with the ATLAS Detector at 7 TeV Center-of-Mass Energy**”.

ATLAS note (EPS 2011 conference), ATLAS-CONF-2011-112 (2011).

[54] ATLAS Coll., “**Search for the Standard Model Higgs boson in the decay channel H to $ZZ^{(*)}$ to $4l$ with 40 pb^{-1} of pp collisions at $\sqrt{s}=7 \text{ TeV}$ ”.**

ATLAS conf note (Moriond 2011), ATLAS-CONF-2011-048 (2011).

[53] ATLAS Coll., “**ATLAS Sensitivity Prospects for a Higgs Boson Production at the LHC Running at $7, 8$ or 9 TeV ”.**

ATLAS note, ATL-PHYS-PUB-2010-015 (2010).

[52] ATLAS Coll., “**Measurement of the $W \rightarrow l\nu$ production cross-section and observation of $Z \rightarrow ll$ production in proton-proton collisions at $\sqrt{s}=7 \text{ TeV}$ with the ATLAS detector**”.

ATLAS note, ATLAS-CONF-2010-051 (2010).

[51] ATLAS Coll., “**Observation of $W \rightarrow l\nu$ and $Z \rightarrow ll$ production in proton-proton collisions at $\sqrt{s}=7$ TeV with the ATLAS detector**”.

ATLAS note, ATLAS-CONF-2010-044 (2010).

[50] ATLAS Coll., “**Performance of the ATLAS EM calorimeter for $\pi^0 \rightarrow \gamma\gamma$ and $\eta \rightarrow \gamma\gamma$ events**”.

ATLAS conference note, ATLAS-CONF-2010-006 (2010).

[49] ATLAS Coll., “**Search for the Standard Model Higgs boson via Vector Boson Fusion production process in the di-tau channels with ATLAS**”.

ATLAS note, ATL-PHYS-PUB-2009-055 (2008).

[48] M. Aleksa, M. Delmastro, M. Fanti, R. Lafaye, W. Lampl, S. Laplace, D. Prieur, F. Tarrade, I. Wingerter-Seez, “**ATLAS Combined Testbeam 2004: Computation and Validation of the Electronic Calibration Constants for the Electromagnetic Calorimeter**”.

ATL-LARG-PUB-2006-003 (2006).

[47] E. Richter-Was, H. Przysiezniak, F. Tarrade “**Exploring hadronic tau identification with DCI data samples : a track based approach**”.

ATLAS note, ATL-PHYS-2004-030 (2004).

Contributing author (selection):

Of the more than 300 remaining papers written by the ATLAS collaboration I list below only those for which I contribute:

[46] ATLAS Coll., “**New Small Wheel Technical Design Report**”.

ATLAS TDR, CERN-LHCC-2013-006.

[45] ATLAS Coll., “**Search for the Standard Model Higgs boson in the two photon decay channel with the ATLAS detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2011-129.

[44] ATLAS Coll., “**Limits on the production of the Standard Model Higgs Boson in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector**”.

ATLAS paper, CERN-PH-EP-2011-076.

[43] ATLAS Coll., “**Measurement of the Muon Charge Asymmetry from W Bosons Produced in pp Collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector**”.

ATLAS paper, CERN-PH-EP-2011-036.

[42] ATLAS Coll., “**Measurements of underlying-event properties using neutral and charged particles in pp collisions at $s = 900$ GeV and $\sqrt{s} = 7$ TeV with the ATLAS detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2011-017.

[41] ATLAS Coll., “**Measurement of Dijet Azimuthal Decorrelations in pp Collisions at $\sqrt{s} = 7$ TeV**”.

ATLAS paper, CERN-PH-EP-2011-014.

[40] ATLAS Coll., “**Luminosity Determination in pp Collisions at $\sqrt{s} = 7$ TeV using the ATLAS Detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2010-069.

[39] ATLAS Coll., “**Measurement of the centrality dependence of J/Φ yields and observation of Z production in lead-lead collisions with the ATLAS detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2010-090.

[38] ATLAS Coll., “**Measurement of the production cross section for W bosons in association with jets in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector**”.

ATLAS paper, CERN-PH-EP-2010-081.

[37] ATLAS Coll., “**Measurement of the inclusive isolated prompt photon cross section in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector**”.

ATLAS paper, CERN-PH-EP-2010-068.

[36] ATLAS Coll., “**Charged particle multiplicities in pp interactions measured with the ATLAS detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2010-079.

[35] ATLAS Coll., “**Measurement of the top quark-pair production cross section with ATLAS in pp collisions at $\sqrt{s} = 7$ TeV**”.

ATLAS paper, CERN-PH-EP-2010-064.

[34] ATLAS Coll., “**Studies of the performance of the ATLAS detector using cosmic-ray muons**”.

ATLAS paper, CERN-PH-EP-2010-070.

[33] ATLAS Coll., “**Measurement of underlying event characteristics using charged particles in pp collisions at $\sqrt{s} = 900$ GeV and 7 TeV with the ATLAS Detector**”.

ATLAS paper, CERN-PH-EP-2010-063.

[32] ATLAS Coll., “**Observation of a Centrality-Dependent Dijet Asymmetry in Lead-Lead Collisions at $\sqrt{s_{NN}} = 2.76$ TeV with the ATLAS Detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2010-062.

[31] ATLAS Coll., “**Measurement of inclusive jet and dijet cross sections in proton-proton collisions at 7 TeV centre-of-mass energy with the ATLAS detector**”.

ATLAS paper, CERN-PH-EP-2010-034.

[30] ATLAS Coll., “**Commissioning of the ATLAS Muon Spectrometer with Cosmic Rays**”.

ATLAS paper, CERN-PH-EP-2010-045.

[29] ATLAS Coll., “**Performance of the ATLAS Detector using First Collision Data**”.

ATLAS paper, CERN-PH-EP-2010-015.

[28] ATLAS Coll., “**Charged-particle multiplicities in pp interactions at $\sqrt{s} = 900$ GeV measured with the ATLAS detector at the LHC**”.

ATLAS paper, CERN-PH-EP-2010-004.

- [27] ATLAS Coll., “*Drift Time Measurement in the ATLAS Liquid Argon Electromagnetic Calorimeter using Cosmic Muons*”.
ATLAS paper, CERN-PH-EP-2010-042.
- [26] ATLAS Coll., “*Expected performance of the ATLAS experiment: detector, trigger and physics*”.
ATLAS paper, CERN-OPEN-2008-020.
- [25] ATLAS Coll., “*Measurement of the response of the ATLAS liquid argon barrel calorimeter to electrons at the 2004 combined test-beam*”.
ATLAS paper, Nuclear Inst. and Methods in Physics Research, A 614 (2010), p400-432.
- [24] ATLAS Coll., “*Readiness of the ATLAS Liquid Argon Calorimeter for LHC Collisions*”.
ATLAS paper, Eur.Phys.J.C70:723-753,2010.
- [23] ATLAS Coll., “*Expected Performance of the ATLAS Experiment : Detector, Trigger and Physics*”.
ATLAS paper, CERN-OPEN-2008-020.
- [22] ATLAS Coll. , “*The ATLAS Experiment at the CERN Large Hadron Collider*”.
ATLAS paper, Journal of Instrumentation (JINST), JINST 3 S08003, August 14, 2008.
- [21] ATLAS Coll., “*Energy linearity and resolution of the ATLAS electromagnetic barrel calorimeter in an electron test-beam*”.
ATLAS paper, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment Volume 568, Issue 2, p601-623, December 1, 2006.
- [20] ATLAS Coll., “*Computation A Layer Correlation technique for pion energy calibration at the 2004 ATLAS Combined Beam*”.
ATLAS paper, JINST 6 P06001 (2011).

Proceeding publications:

- [19] F. Tarrade, “*Standard Model Higgs Combination at ATLAS*”. – Hadron Collider Physics 2011, Proceeding of the Hadron Collider Physics Symposium 2011, Paris, France, November 14-18, 2011.
- [18] F. Tarrade, “*W + jets backgrounds in charged Higgs searches*”. – Charged Higgs 2010, Proceeding of the Third International Workshop on Prospects for Charged Higgs Discovery at Colliders, Uppsala, Sweden, September 27-30 2010.
Proceeding of Science (Charged 2010) 013.
- [17] S. Panitkin, D. Benjamin, G. Carillo Montoya, K. Cranmer, M. Ernst, W. Guan, H. Ito, T. Maeno, S. Majewski1, B. Mellado, O. Rind, A. Shibata, F. Tarrade, T. Wenaus, N. Xu and S. Ye, “*Distributed analysis with PROOF in ATLAS collaboration*”.
Journal of Physics: Conference Series, Vol 219 (2010).
- [16] F. Tarrade, “*Results from ATLAS Calorimeter Combined Test Beam*”. – HEP 2007, Proceeding of the 2007 Europhysics Conference on High Energy Physics, Manchester, England, July 19-25, 2007.
Journal of Physics : Conference Series (2008) .

[15] F. Tarrade, **“Reconstruction and identification of hadronic tau-decays in ATLAS”**. Tau06, Proceedings of the 9th International Workshop on Tau Lepton Physics, Pisa, Italy, September 19-22, 2006.

Nuclear Physics B (Proc. Suppl.) 169 (2007).

[14] F. Tarrade, **“Tau id at ATLAS importance, method and confrontation with MC and test beam”**. Hadron Collider Physics 2005, Proceedings of the 1st Hadron Collider Symposium, Les Diablerets, Switzerland, July 4-9, 2005.

Springers Proceedings in Physics, Vol 108 (2006).

Internal ATLAS collaboration notes (selection):

There have been more than 50 internal ATLAS notes written in the context of the various working groups in which I am involved (Higgs searches, Higgs combination, W/Z Boson cross section measurement, WZ Boson Observation, electron and photon identification, τ -jet identification, data preparation, data quality, test of a combined slice of the ATLAS detector, calibration of the liquid argon calorimeters):

[13] ATLAS and CMS Coll., **“Combined Standard Model Higgs boson searches with up to 1.2 fb-1 of pp collisions at $\sqrt{s} = 7$ TeV at the LHC”**.

ATLAS-CMS internal note, ATLAS-COM-CONF-2011-160 (2011).

[12] ATLAS and CMS Coll., **“Combined Standard Model Higgs boson searches with up to 1.2 fb-1 of pp collisions at $\sqrt{s} = 7$ TeV at the LHC”**.

ATLAS-CMS supporting note, ATLAS-COM-PHYS-2011-1080 (2011).

[11] S. Angelidakis *et al.*, **“Tests of the data driven ZZ and Z+jets background estimation methods for the Higgs boson search in the 4-lepton final state”**.

ATLAS note, ATL-COM-PHYS-2010-611.

[10] M. Aharrouche *et al.*, **“Wenu and Zee observations supporting note”**.

ATLAS note, ATL-COM-PHYS-2010-472.

[9] M. Bellomo *et al.*, **“Observation of $W \rightarrow \mu\nu$ and $Z \rightarrow \mu\mu$ in proton-proton collisions at $\sqrt{s} = 7$ TeV with the ATLAS”**.

ATLAS note, ATL-COM-PHYS-2010-265.

[8] F. Tarrade *et al.*, **“Computation and validation of the electronic calibration constants for the ATLAS liquid argon calorimeters”**.

ATLAS note, ATL-LARG-INT-2010-007 (2010).

[7] S. Albrand *et al.*, **“ATLAS Dataset Nomenclature”**.

ATLAS note, revisited version of ATL-COM-GEN-2007-003 (2009).

[6] S. Baffioni, A. Carioni, L. Carminati, M. Citterio, M. Chalifour, A.I. Etienvre, L. Fayard, T. Frattini, A. Gonidec, L. Hervas, N. Kerschen, D. Lacour, M. Mazzanti, P. Perrodo, P. Puzo, A. Sammut, L. Serin, S. Simion, F. Tarrade, F. Tartarelli, H. Wilkens, C. Zeitnitz, **“Commissioning of the EMB detector in building 180”**.

ATLAS note, ATL-AB-ON-0001 (2006).

[5] F. Tarrade, *“Etude du boson de Higgs du Modèle Standard dans l’expérience ATLAS”*.
Contribution to: Journées jeunes chercheurs 2004.

Outreach (editor):

[4] F. Tarrade, *“Le boson de Higgs, Un nouveau départ pour la physique ?”*.
Pour la Science N°xxx - 2014.

[3] F. Tarrade, *“¿Está la partícula de Higgs asomando la cabeza?”*.
Investigación y Ciencia N° 425 - Febrero 2012.

[2] F. Tarrade, *“Le boson de Higgs, Un nouveau départ pour la physique ?”*.
Pour la Science N°419 - Septembre 2012.

[1] F. Tarrade, *“Higgs boson: why you should care”*.
Astronomy Vol 40 Issue 11 - November 2012.