

Curriculum vitae

Anne-Catherine Le Bihan
DOB: 06/09/1978, 40 years old
French and German
Two children

- **Since november 2007**, research staff at CNRS (*Chargée de recherche CR1*), CMS team at Institut pluridisciplinaire Hubert Curien (IPHC), Strasbourg;
- **18 May 2017**, *Habilitation à diriger des recherches*, University of Strasbourg (Unistra);
- **October 2005 - September 2007**, CERN fellow, Inner detector group of the ATLAS experiment;
- **April 19 2005**, Ph.D., *Identification of tau leptons in the $D\bar{O}$ experiment at Tevatron and search for supersymmetric particles decaying with R -parity (λ_{133} coupling)*, Université Louis Pasteur, Strasbourg.

Scientific responsibilities:

- Co-convenor of *b-tagging at Hight Level Trigger*, level 3 coordination of the CMS experiment, March 2013 - September 2015.

Editorial work:

- Editor: *Measurement of the $t\bar{t}$ production cross section in the $\tau + \text{jets}$ channel at $\sqrt{s} = 7 \text{ TeV}$* , Eur. Phys. J. C73 (2013) 2386.
- Member of the analysis review committees of the CMS experiment:
 - HIG-18-006, *Search for a very light pseudoscalar boson produced in decays of the 125 GeV Higgs boson and decaying into tau leptons in pp collisions at $\sqrt{s} = 13 \text{ TeV}$* ;
 - HIG-17-030, *Combination of HH analyses with 2016 dataset*;
 - B2G-17-009, *Search for singly produced vector-like quarks B that decay to a b quark and a Higgs boson in all-jet events with highly boosted topologies*;
 - HIG-17-002, HIG-16-029, HIG-16-028, *Search for the resonant and non-resonant Higgs boson pair production in the $b\bar{b}\tau\tau$ final state using 2016 data*;
 - HIG-13-011, *Search for MSSM Neutral Higgs Boson decaying to a pair of tau leptons in pp collisions*;
 - HIG-12-051, *Search for a Standard Model Higgs boson decaying to tau pairs produced in association with a W or Z boson*.

Ph.D. jury committees: Luca Cadamuro, LLR, CMS, 2017 - Thomas Calvet, CPPM, ATLAS, 2017.

Administrative tasks:

- Elected member of the French Committee for Scientific Research (CoNRS), section 01, *Interactions, particules, noyaux, du laboratoire au cosmos*, 2016 - 2021;
- Scientific secretary, section 01 of CoNRS, 2016 - 2021;
- Member of selection committees for lecturer positions at Unistra, May 2018, May 2014;
- Member of the *Comité d'experts 29^{ème} section*, Unistra, since october 2012.

Teaching:

- Lecture *Beyond the Standard Model*, 4h, Master2 PSA, Unistra, since 2017;
- Lecture at the French-Chinese France Excellence School, *Physics at CMS*, 2h (2017, 2018), student project, 6h (2017);
- Member of the Master2 intension jury committees, IPHC, June 2015, June 2016;
- Teaching as Ph.D. student, 64 hours a year, Université Louis Pasteur, Strasbourg, 2002-2005.

Students supervision:

- Guillaume Bourgatte, Ph.D., September 2017 - 2020, supervisor, *Recherche de violation de CP dans le couplage de Yukawa au lepton tau dans l'expérience CMS auprès du LHC*;
- Xavier Coubez, Ph.D., September 2014 - Septembre 2017, supervision with Daniel Bloch, *Recherche du boson de Higgs standard produit en association avec une paire de quarks top dans le canal multi-leptons dans l'expérience CMS auprès du LHC*, defended September 15 2017;
- Cristina Ferro, Ph.D., September 2009 - May 2012, supervision with Daniel Bloch, *Mesure de la section efficace de production de paires de quarks top dans le canal tau+jets dans l'expérience CMS auprès du LHC*, defended May 14 2012;
- Six L3 students (10 days, 2010, 2016, 2018);
- Two Master1 students (two months, 2013), one Master2 student (four months, 2014);
- One Janus internship, August 2008.

Outreach:

- MasterClasses at IPHC: *Both infinities* (2014), *Creation and detection of particles : LHC and CMS* (2012), *Introduction to particle physics* (2010, 2011);
- Careers event, André Maurois Highschool, Bischwiller, *The researcher's job*, February 2012;
- Exhibition, *L'infiniment petit vu en grand*, organised by the IPHC CMS team, Palais U. de Strasbourg, October 2008;
- Convener of the *Beyond the standard model* session, *Journées Jeunes Chercheurs 2007*, Dinard, December 2007;

School and workshop organisations:

- Member of the local organizing committee of the French-Chinese France Excellence School, IPHC, 2018;
- Member of the local organizing committee of the École de GIF, *What future for Standard model physics after the discovery of the the Higgs boson ?*, IPHC, September 2015;
- Organisation of the *CMS Trigger Workshop*, IPHC, October 2014;
- Member of the local organizing committee of *Both infinities* Summer School, Unistra, July 2011;
- Member of the local organizing committee of the S0S'08 statistics school, IPHC, July 2008.

Conferences and workshops:

- *The CMS particle flow algorithm*, International Linear Collider WorkShop, LCWS, October 2017, Strasbourg;

- *TTH in CMS*, GDR Terascale, June 2016, Nantes;
- *Measurements of top-antitop production in association with a boson (ttZ , ttW , $tt\gamma$, ttH) with ATLAS+CMS*, Standard Model at LHC, April 2015, Firenze;
- *Top pair production cross-section measurement in lepton+jets channel with ATLAS+CMS*, Journées LHC France, April 2013, Annecy;
- *Expectations for first measurements of top-antitop pair production using early CMS data*, BEACH2010, June 2010, Perugia;
- *History Plotting Tool for Data Quality*, 11th Pisa meeting on advanced detectors, Frontier Detectors for Frontier Physics, poster, May 2009, Isola d'Elba;
- *First Physics at ATLAS*, DIS2007, April 2007, München, Germany;
- *Tau physics at DØ*, TAU04, September 2004, Nara, Japan.

Main publications:

- The CMS Collaboration, *Performance of reconstruction and identification of τ leptons in their decays to hadrons and in the CMS detector at LHC with the 2016 data*, CMS-TAU-16-003-002, CERN-EP-2018-229;
- The CMS Collaboration, *Evidence for associated production of a Higgs boson with a top quark pair in final states with electron, muons and hadronically decaying τ leptons at $\sqrt{s} = 13$ TeV*, JHEP 1808 (2018) 066;
- The CMS Collaboration, *Search for the standard model Higgs boson produced in association with top quarks in multilepton final states*, CMS-PAS-HIG-13-020, CMS-PAS-HIG-15-008, CMS-PAS-HIG-16-022, CMS-PAS-HIG-17-004;
- The CMS Collaboration, *High Level Trigger Performance Plots for ICHEP2016*, CMS DP-2016/056;
- CMS Collaboration, *Measurement of the $t\bar{t}$ production cross section in the $\tau + jets$ channel at $\sqrt{s} = 7$ TeV*, Eur. Phys. J. C73 (2013) 2386;
- DØ Collaboration, *Search for R-parity Violating Supersymmetry via the LLE Couplings λ_{121} , λ_{122} , or λ_{133} in $p\bar{p}$ Collisions at $\sqrt{s}=1.96$ TeV*, Phys. Lett. B638 (2006) 441;
- DØ Collaboration, *First measurement of $\sigma(p\bar{p} \rightarrow Z) \times \text{Br}(Z \rightarrow \tau\tau)$ at $\sqrt{s} = 1.96$ TeV*, Phys. Rev. D 71, 072004 (2005).

Miscellaneous:

- *Espoirs prize*, Unistra, 2016, 10 kEuros;
- Ph.D. prize, Société des Amis des Universités de l'Académie de Strasbourg, May 2006;
- *Diplomphysikerin*, French-German integrated curriculum, Universities of Strasbourg and Kaiserslautern, September 2002;
- Second year university diploma in French Literature (*DEUG de Lettres Modernes*), Bourgogne University, June 2000.