

Basil Schneider

contact

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languages

German (native)
English (fluent)
French (moderate)
Croatian (beginner)
Norwegian (beginner)

computing

Linux
C++, Python, Rust
Root, RooFit, RooStats
bash, sed, awk
SQL, databases
git, svn
HTML, CSS
L^AT_EX

besides physics

Cycling
Hiking
Music

education & employment

- Nov '15 - now **Research Associate** at the **CMS experiment** Fermilab, USA
- Nov '14 - Oct '15 **Postdoctoral Fellow** at the **ATLAS experiment** TRIUMF, Canada
- Jan '11 - Jul '14 **Ph.D.** at the **ATLAS experiment** University of Bern, Switzerland
Ph.D. Thesis: A general approach to search for supersymmetry at the LHC by combining signal enhanced kinematic regions using the ATLAS detector (Supervisor: Prof. A. Ereditato)
- Sep '08 - Mar '10 **Master** of Science in **Theoretical Physics** ETH Zurich, Switzerland
Master Thesis: The partition function of meromorphic conformal field theories at higher genus (Supervisor: Prof. M. Gaberdiel)
- Oct '04 - Sep '08 **Bachelor** of Science in **Experimental Physics** ETH Zurich, Switzerland
Bachelor Thesis: Untersuchung der Cluster-Struktur von Elastomerpartikeln durch Simulation des Aggregationsvorganges und Partikelgrößen mittels dynamic light scattering (Supervisor: Dr. Cornelius Gauer)
- Sep '04 **Comprehensive entrance exam** ETH Zurich, Switzerland
Exam at the level of a Matura

awards

- Mar '15 **Faculty award winner of the University of Bern**
Award for the best PhD thesis in physics at the University of Bern in the year 2014

leadership

- Jan '18 - now **SUSY Leptonic subgroup co-convener**
- Oct '16 - May '17 **Coordinator of the Single Lepton dPhi Analysis group**

conferences

Jul '18	Conference on Supersymmetry and Unification of Fundamental Interactions Speaker: "Searches for chargino, neutralino and slepton production with CMS" Barcelona, Spain
Oct '17	IEEE Nuclear Science Symposium and Medical Imaging Conference Poster: "A new DAQ solution: <i>otsdaq</i> " Atlanta, GA, USA
Aug '17	Meeting of the Division of Particles and Fields of the American Physical Society Fermilab, Batavia, IL, USA Speaker: "Searches for electroweakly produced supersymmetry with CMS"
May '17	Phenomenology 2017 Symposium Pittsburgh, PA, USA Speaker: "Searches for supersymmetry in single or opposite-charged dilepton final states with CMS"
Jun '16	49th Annual Fermilab Users Meeting Fermilab, Batavia, IL, USA Poster: "Characterization of the pixel ASIC with a laser beam in the Outer Tracker upgrade of the CMS detector"
May '15	Mitchell Workshop on Collider and Dark Matter Physics Texas A&M University, College Station, TX, USA Speaker: "Supersymmetry searches in ATLAS"
May '13	1st LHC Physics Conference (LHCP) Barcelona, Spain Poster: "Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in 21 fb ⁻¹ of pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector"
Jun '12	Swiss Physical Society ETH, Zurich, Switzerland Speaker: "New Optical receiver modules for the insertable B-Layer at the ATLAS project"
Jun '11	Physics at LHC Perugia, Italy Poster: "SUSY Searches at ATLAS in Multilepton Final States with Jets and Missing Transverse Energy"
Jun '11	Swiss Physical Society EPF, Lausanne, Switzerland Speaker: "Insertable b-Layer: A new layer for the ATLAS detector at CERN"

workshops

Jun '18	CMS SUS Workshop Chair: SUS Leptonic Session Speaker: "SUSY ISR Analysis for Phase-2 with brief Delphes introduction" HEPHY, Vienna, Austria
May '18	CMS Future New Physics Workshop CERN, Geneva, Switzerland Speaker: "Delphes tuning and validation" & "Search for natural SUSY"
Apr '18	HL/HE-LHC Workshop Fermilab, Batavia, IL, USA Invited speaker: "Search for electroweak SUSY with CMS at the HL/HE-LHC" (declined due to conflicting commitments)
Feb '18	CMS Higgs Future Analyses Workshop CERN, Geneva, Switzerland Speaker: "Delphes tuning and validation" & "Search for natural SUSY"
Apr '17	CMS SUS Workshop Universiteit Gent, Ghent, Belgium Speaker: "The case for a pMSSM model with higgsino LSP"
Jun '15	USATLAS Workshop University of Illinois at Urbana-Champaign, IL, USA Invited speaker: "Supersymmetry prospects in Run-2"

journal publications

I am co-author of 475 ATLAS publications and 251 CMS publications;
for a full list, see

<http://inspirehep.net/author/profile/B.Schneider.1>

Publications with substantial contributions from me:

2018	Performance of the Prototype CBC3-based Outer Tracker Module for the Phase-2 Upgrade of CMS	in preparation
2018	Performance of Prototype Silicon Detectors for the Outer Tracker for the Phase-2 Upgrade of CMS	in preparation
Jul '18	Search for new physics in events with two soft oppositely charged leptons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV	Phys. Lett. B 782 (2018) 440
May '18	Search for supersymmetry in events with one lepton and multiple jets exploiting the angular correlation between the lepton and the missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV	Phys. Lett. B 780 (2018) 384
Jan '17	Search for supersymmetry in events with one lepton and multiple jets in proton-proton collisions at $\sqrt{s} = 13$ TeV	Phys. Rev. D 95, 012011 (2017)
Oct '16	Search for gluinos in events with an isolated lepton, jets and missing transverse momentum at $\sqrt{s} = 13$ TeV with the ATLAS detector	Eur. Phys. J. C (2016) 76: 565
Mar '16	Search for the electroweak production of supersymmetric particles in $\sqrt{s} = 8$ TeV pp collisions with the ATLAS detector	Phys. Rev. D 93, 052002 (2016)
Sep '14	Search for supersymmetry in events with four or more leptons in $\sqrt{s} = 8$ TeV pp collisions with the ATLAS detector	Phys. Rev. D. 90, 052001 (2014)
Apr '14	Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in $\sqrt{s} = 8$ TeV pp collisions with the ATLAS detector	JHEP04(2014)169
Jan '13	Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in $\sqrt{s} = 7$ TeV pp collisions with the ATLAS detector	Phys.Lett. B718 (2013) 841-859

proceedings

Jun '13	Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in 21 fb ⁻¹ of pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector	EPJ Web of Conferences 60, 20040 (2013)
Nov '11	The ATLAS IBL BOC Demonstrator	Proceedings, 2011 IEEE Nuclear Science Symposium and Medical Imaging Conference
Oct '11	SUSY Searches at ATLAS in Multilepton Final States with Jets and Missing Transverse Energy	Proceedings, Physics at LHC 2011

public notes

Feb '19	Report on the Physics at the HL-LHC and Perspectives for the HE-LHC CERN-LPCC-2019-01
Nov '18	Searches for light higgsino-like charginos and neutralinos at the HL-LHC with the Phase-2 CMS detector CMS-PAS-FTR-18-001
Nov '18	Search for supersymmetry with direct stau production at the HL-LHC with the CMS Phase-2 detector CMS-PAS-FTR-18-010
Apr '18	The Phase-2 Upgrade of the CMS Endcap Calorimeter – Technical Design Report CERN-LHCC-2017-023
Sep '17	The Phase-2 Upgrade of the CMS Barrel Calorimeters – Technical Design Report CERN-LHCC-2017-011
Jun '17	The Phase-2 Upgrade of the CMS Tracker – Technical Design Report CERN-LHCC-2017-009
Dec '16	Search for new physics in the compressed mass spectra scenario using events with two soft opposite-sign leptons and missing transverse momentum at $\sqrt{s} = 13$ TeV CMS PAS SUS-16-025
Aug '16	Search for supersymmetry in events with one lepton and multiple jets in proton-proton collisions at $\sqrt{s} = 13$ TeV in 2016 CMS PAS SUS-16-019
Jul '15	First look at proton proton collision data at $\sqrt{s} = 13$ TeV in preparation for a search for squarks and gluinos in events with missing transverse energy, jets, and an isolated electron or muon ATL-PHYS-PUB-2015-029
Mar '15	Expected sensitivity studies for gluino and squark searches using the early LHC 13 TeV Run-2 dataset with the ATLAS experiment ATL-PHYS-PUB-2015-005
Jun '14	A general approach to search for supersymmetry at the LHC by combining signal enhanced kinematic regions using the ATLAS detector (PhD thesis) CERN-THESIS-2014-056
Mar '13	Search for supersymmetry in events with four or more leptons in 21 fb ⁻¹ of pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector ATLAS-CONF-2013-036
Mar '13	Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in 21 fb ⁻¹ of pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector ATLAS-CONF-2013-035
Nov '12	Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in 13.0 fb ⁻¹ of pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector ATLAS-CONF-2012-154
Nov '12	Search for Supersymmetry in events with four or more leptons in 13 fb ⁻¹ pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector ATLAS-CONF-2012-153

organization

Aug '12	Co-organizer of workshop: ATLAS SUSY Statistical Interpretations workshop Wrap up lessons learned in previous round of publications and spot possible improvements for next round
Sep '11	Co-organizer of outreach event: Nacht der Forschung University of Bern Performing experiments in public and discussing results

outreach

Jan '16	Fermilab Open House	University of Bern
	Explaining the purpose and the mission of Fermilab to the public	
Nov '13 - now	Official ATLAS underground guide	University of Bern
	Showing the ATLAS detector to the public during LHC shutdowns	
Mar '12 - Mar '13	Masterclasses	University of Bern
	Helping high school students performing measurements on real LHC data	
Sep '11	Nacht der Forschung	University of Bern
	Presenting LHC physics on a poster and answering questions of the public in a research outreach event at the University of Bern	

committees

Oct '18	Analysis Review Committee: Search for Vector-Like-Fermions in the two or one soft muon and missing transverse energy final state in the context of the HL-LHC and Phase-II CMS experiment	In review
Feb '18	Analysis Review Committee: Search for supersymmetry in events with two tau leptons and missing transverse momentum in $\sqrt{s} = 13$ TeV proton-proton collisions with the CMS detector	10.1007/JHEP11(2018)151
Jul '17	Analysis Review Committee: Search for pair production of tau sleptons in $\sqrt{s} = 13$ TeV pp collisions in the all-hadronic final state	CMS-PAS-SUS-17-003
Jan '17	Analysis Review Committee: Search for physics beyond the standard model in events with two leptons of same sign, missing transverse momentum, and jets in proton-proton collisions at $\sqrt{s} = 13$ TeV	Eur. Phys. J. C 77 (2017) 578
Jul '16	Analysis Review Committee: Search for SUSY in same-sign dilepton events at 13 TeV	CMS-PAS-SUS-16-020

teaching

Jan '11 - May '14	Lab Course	University of Bern
	Supervising and assisting Physics undergraduate students working on fundamental experiments in mechanics and electronics	
Jan '11 - May '14	Physics for Biologists	University of Bern
	Assisting 1 st year Physics course	
Jul '11 - May '14	Private lessons for high-school graduates	Interlink Schulberatung GmbH
	Private lessons in Mathematics, Statistics and Physics	
Jun '08	Exam preparation	ETH Zurich
	Exam preparation for 1 st year Physics and Mathematics students	
2007/2008	Teaching assistant	ETH Zurich
	Teaching assistant for environmental science students in Calculus	

supervision

Jul '16 - Oct '16 **David Jin**
Summer Student at Fermilab, University of Chicago

May '16 - Aug '16 **Christian Leefmans**
Summer Student at Fermilab, Cornell University

Dec '14 - Nov '15 **Felix Cormier**
MSc student at CERN, University of British Columbia

Nov '14 - Nov '15 **Matthew Gignac**
PhD student at CERN, University of British Columbia

Dec '12 - Mar' 14 **Benjamin Gerber**
MSc student, University of Bern