

# Cédric Weiland

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## Research Interests

Lepton flavour violation  
Neutrinos physics (phenomenology, sterile neutrinos, leptogenesis)  
Physics beyond the Standard Model (supersymmetry, extra-dimensions)  
Cosmology

## Education

**2010–2013 Ph.D. in Physics** at the **University of Paris-Sud 11**.

**2008–2010 Research Master in Physics** from **École Normale Supérieure (ENS) de Lyon**.  
passed with upper second class honours, courses in Theoretical Physics.

**2007–2008 Bachelor in Physics** from **ENS de Lyon**.  
passed with upper second class honours.

**2007** Cleared competitive exams and entered the **ENS de Lyon** as a *Normalien*,  
a 4-year trainee civil servant position equivalent to a fellowship .

## Professional Activities

### Research Experience

**10.2010–** **Ph.D. student**, Laboratoire de Physique Théorique at the **Univ. of Paris-Sud 11**.  
*“Complementarity of direct and indirect searches of New Physics scales”* supervised by Asmaa Abada.

**06.2012–08.2012 JSPS fellow**, Kavli IPMU, TODIAS, at the **Univ. of Tokyo**.  
*“NMSSM with Scherk-Schwarz supersymmetry breaking”* supervised by Hitoshi Murayama.

**04.2010–07.2010 Intern**, Laboratoire de Physique Théorique at the **Univ. of Paris-Sud 11**.  
*“Lepton flavour violation and Physics beyond the Standard Model”* supervised by Asmaa Abada.

**05.2009–07.2009 Intern**, Particle Physics Research Centre at **Queen Mary, Univ. of London**.  
*“SuperB potential to discover Lepton Flavor Violation with the decay  $\tau \rightarrow \mu\mu\mu$ ”* supervised by Adrian Bevan.

**06.2008–08.2008 Summer student** at **CERN**.  
*“Noise study in the CMS silicon microstrip tracker”* supervised by Laurent Mirabito.

## Teaching Experience

**09.2011–**      **Teaching assistant** at the **Univ. of Paris-Sud 11**.

teaching Wave Physics (problem classes, lab classes) and Observational Cosmology (lectures) in second year of undergraduate education.

**09.2010–06.2011** **Teaching assistant** at **Lycée Blaise Pascal**, Orsay, France.

teaching Physics in second year of undergraduate education.

**2004–2010**      **Private tutor** in Mathematics, Physics and Chemistry.

Scientific secretary during the 35<sup>th</sup> *ICHEP International Conference on High Energy Physics*, Paris, France, 22–28 July 2010.

Organizer of the Young Researchers Seminar at LPT, University Paris-Sud 11, September 2011–June 2012.

## Seminars and presentations

“**Lepton Flavour Violation in the Supersymmetric Inverse Seesaw Model**”, Rencontres de Physique des Particules, UM2, Montpellier, France, 15 May 2012.

“**Higgs Mediated LFV in the Supersymmetric Inverse Seesaw Model**”, Invisibles ITN pre-meeting, UAM, Madrid, Spain, 29 March 2012.

“**Lepton Flavour Violation in the Supersymmetric Inverse Seesaw Model**”, LPT, Orsay, France, 21 February 2012, *young seminar*.

“**Violation de la saveur leptonique dans le Modèle de Seesaw Inverse Supersymétrique**”, CENBG, Bordeaux, France, 02 February 2012, *invited seminar*.

“**Enhanced Higgs Mediated LFV Processes in the SUSY Inverse Seesaw Model**”, SuperB Physics Workshop, INFN–LNF, Frascati, Italy, 11 December 2011, *invited talk*.

“**Enhanced Higgs Mediated Lepton Flavour Violating Processes in the Supersymmetric Inverse Seesaw Model**”, SIF–ISAPP Summer School, Varenna, Italy, 03 August 2011.

“**SuperB potential to discover Lepton Flavor Violation with the decay  $\tau \rightarrow \mu\mu\mu$** ”, X<sup>th</sup> SuperB General Meeting, SLAC, Stanford, USA, 08 October 2009.

“**Noise Study in CMS microstrip tracker**”, Student Session, CERN, 12 August 2008.

Annual meeting of the French National Ethics Committee for Health and Life Sciences, Paris, France, 2004.

## Posters

“**Charged Lepton Flavour Violation as an Evidence of New Physics**”, JSPS Summer Program, Sokendai, Japan, 15 June 2012.

“**Lepton Flavour Violation in the Supersymmetric Inverse Seesaw**”, Neutrino 2012, Kyoto, Japan, 03–09 June 2012.

“**Enhanced Higgs Mediated Lepton Flavour Violating Processes in the Supersymmetric Inverse Seesaw Model**”, SIF–ISAPP Summer School, Varenna, Italy, 26 July–05 August 2011.

## Summer schools, Conferences and Workshops

*Neutrino 2012*, Kyoto, Japan, 03–09 June 2012.

*RPP Rencontres de Physique des Particules*, UM2, Montpellier, France, 15–16 May 2012.

*Invisibles ITN pre-meeting*, UAM, Madrid, Spain, 29–30 March 2012.

*SuperB Physics Workshop*, INFN–LNF, Frascati, Italy, 11–12 December 2011.

*Les Neutrinos, École de Gif 2011*, APC, Paris, France, 12–16 September 2011.

*The Neutrino Physics and Astrophysics, SIF–ISAPP Summer School*, Varenna, Italy, 26 July–05 August 2011.

*GDR Neutrinos Plenary Meeting*, IPN Orsay, France, 11 October 2010.

35<sup>th</sup> *ICHEP International Conference on High Energy Physics*, Paris, France, 22–28 July 2010.

*RPP Rencontres de Physique des Particules 2010*, IPN Lyon, France, 25–27 January 2010.

*CERN Summer School*, Geneva, Switzerland, 2 June–22 August 2008.

*Journées annuelles du Comité National Consultatif d’Éthique*, Paris, France, 2004.

## Award and Fellowships

*JSPS Summer Program Fellowship*, Japan, 12 June–22 August 2012.

*Award to the Best Students*, SIF–ISAPP Summer School, Varenna, Italy, 26 July–05 August 2011.

*Ph.D. Fellowship for Normalien*, France, September 2011–August 2014.

*Normalien*, France, September 2007–August 2011.

## Memberships

*ITN Invisibles*, Marie Curie Initial Training Network

*GDR Neutrinos*, French Research Network

*French Physical Society*

*Écoles Normales Supérieures of Lyon, Saint-Cloud and Fontenay-aux Roses Alumni Association*

## Other skills

**Mother Tongue** French

**Other Languages** English: fluent.  
German: working knowledge.  
Japanese: advanced beginner.

**Information Technology** Programming Languages: Experienced in C and C++.  
Working knowledge of parallel programming (OpenMP) and shell scripting.  
OS: Linux, Windows.  
Software: Maple, Mathematica, FeynArts, FeynCalc, ROOT.  
Hardware: Basic servicing.

**First aid** PSC1 (10 hours basic course).

**Fire fighting** Basic training.

## References

1. Asmaa Abada Université Paris Sud 11, Orsay, France  
Phone: +33 1 69 15 63 22  
e-mail: asmaa.abada@th.u-psud.fr
2. Adrian Bevan Queen Mary, University of London, United Kingdom  
Phone: +44 20 7882 5046  
e-mail: a.j.bevan@qmul.ac.uk
3. Hitoshi Murayama Kavli IPMU, TODIAS, University of Tokyo, Japan  
University of California, Berkeley, USA  
Lawrence Berkeley National Laboratory, Berkeley, USA  
Phone: +81-4-7136-5961  
e-mail: director@ipmu.jp
4. Ana Teixeira LPC, Université Blaise Pascal, Clermont-Ferrand, France  
Phone: +33 4 73 40 73 01  
e-mail: ana.teixeira@clermont.in2p3.fr

## List of Publications

▷ **“Enhancing lepton flavour violation in the supersymmetric inverse seesaw beyond the dipole contribution”**,

Asmaa Abada, Debottam Das, Avelino Vicente, Cédric Weiland

**JHEP09(2012)015**, arXiv:1206.6497[hep-ph]

**“Enhanced Higgs Mediated Lepton Flavor Violating Processes in the Supersymmetric Inverse Seesaw Model”**,

Cédric Weiland

arXiv:1205.6400[hep-ph], to be published in the Proceedings of the International School of Physics “Enrico Fermi”, Course CLXXXII

▷ **“Enhanced Higgs Mediated Lepton Flavor Violating Processes in the Supersymmetric Inverse Seesaw Model”**,

Asmaa Abada, Debottam Das and Cédric Weiland

**JHEP03(2012)100**, arXiv:1111.5836[hep-ph]

▷ **“A possible connection between neutrino mass generation and the lightness of a NMSSM pseudoscalar”**,

Asmaa Abada, Gautam Bhattacharyya, Debottam Das and Cédric Weiland

**Phys. Lett. B700 (2011) 351-355**, arXiv:1011.5037[hep-ph]

▷ **“Super*B* Progress Reports – Physics”**,

The Super*B* Collaboration

arXiv:1008.1541[hep-ex], INFN/AE 10/2, LAL-110, SLAC-R-952

## To be submitted

**“Modified  $R_{e/\mu}^K$  from supersymmetric inverse seesaw contributions”**,

Asmaa Abada, Debottam Das, Ana Teixeira, Avelino Vicente, Cédric Weiland

**“NMSSM with Scherk-Schwarz supersymmetry breaking”**,

Hitoshi Murayama, Kohsaku Tobioka, Richard Ruiz, Cédric Weiland