

# Pierre Simon

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Nationality: French

## Education

- 2008–2011 **PhD in Mathematics**, *Université Paris-Sud*, Paris.  
advisor: Élisabeth Bouscaren  
title: Ordre et stabilité dans les théories NIP  
theme: Model theory (a branch of mathematical logic)
- 2007–2008 **Masters in Mathematics**, *Université Paris 7*, Paris.  
Specialized in Mathematical logic, model theory
- 2007 **Agrégation de mathématiques**.  
(French national mathematics teaching competitive examination; rank: 7)
- 2008 **Diploma of the École Normale Supérieure**.  
Specialized in Mathematics
- 2005–2009 **Student at École Normale Supérieure**, Paris.

## Employment

- 2016–Present **Assistant Professor**, *University of California*, Berkeley.
- 2014–2016 **Chargé de recherche, CNRS**, *Université Claude Bernard*, Lyon.
- Jan–May 2014 **Post-doctoral position**, *MSRI*, Berkeley.
- 2012–2013 **Post-doctoral position**, *Hebrew University*, Jerusalem.
- 2010–2012 **Agrégé-préparateur**, *École Normale Supérieure*, Paris.  
(Teaching assistant)

## Awards and grants

- 2017 NSF Research grant (DMS 1665491)
- 2017 Sloan fellowship
- 2014 Strauch Postdoctoral Scholar, Spring semester, MSRI, Berkeley
- 2013 Mark Fulk Student Award (with Roi Livni)  
(Conference on Learning Theory (COLT), best paper award)
- 2012 Sacks prize  
(Awarded each year to one thesis in mathematical logic, worldwide)
- 2012 Perrissin-Pirasset/Schneider prize from the Chancellerie des Universités de Paris  
(Awarded each year to one thesis in mathematics defended in the Paris area)
- 2003 Contestant at the International Mathematical Olympiads: silver medal

## Other teaching / Students

- 2015 Logic course, AIMS, Senegal
- 2010–2012 Teaching assistant: logic course, 3rd year students, ENS, Paris
- 2009–2010 Teaching assistant: calculus, 2nd year students, Université Paris-Sud  
Voluntary tutoring of 1st and 2nd year students, Université Paris-Sud
- 2008–2009 Calculus course, CMI, Chennai, India
- PhD student: Christian d'Elbée (2015 – 2016)

## Publications

### Book

#### **A Guide to NIP theories**

Lecture notes in Logic, Cambridge University Press 2015

### Published papers

- 25 **Type decomposition in NIP theories**  
*J. European Math. Soc.*, to appear
- 24 **Exact saturation in simple and NIP theories**  
with I. Kaplan and S. Shelah  
*J. Math Logic, Volume 17-1 (2017)*
- 23 **Tame topology over dp-minimal structures**  
with E. Walsberg  
*Notre Dame J. of Formal Logic*, to appear
- 22 **A Note on “Regularity lemma for distal structures”**  
*Proceedings of the AMS, Volume 144-8 (2016) 3573–3578*
- 21 **Definable and invariant types in enrichments of NIP theories**  
with S. Rideau  
*J. Symbolic Logic, Volume 82-1 (2017) 317-324*
- 20 **Dp-minimal valued fields**  
with F. Jahnke and E. Walsberg  
*J. Symbolic Logic, Volume 82-1 (2017) 151-165*
- 19 **VC-sets and generic compact domination**  
*Israel J. of Math., Volume 218, Issue 1 (2017) 27-41*
- 18 **Rosenthal compacta and NIP formulas**  
*Fundamenta Mathematicae, Volume 231 (2015) 81–92*
- 17 **Invariant types in NIP theories**  
*J. Math. Logic, Volume 15-2 (2015)*
- 16 **The affine and projective groups are maximal**  
with I. Kaplan  
*Trans of the AMS, 368-7 (2016) 5229–5245*

- 15 **External definability and groups in NIP theories**  
with A. Chernikov and A. Pillay  
*J. London Math. Soc. Volume 90-1 (2014), 213–240*
- 14 **On forking and definability of types in some dp-minimal theories**  
with S. Starchenko  
*J. Symbolic Logic, Volume 79-4 (2014), 1020–1024*
- 13 **Dp-minimality: invariant types and dp-rank**  
*J. Symbolic Logic, Volume 79-4 (2014), 1025–1045*
- 12 **Honest compressions and their application to compression schemes**  
with R. Livni  
*Proceedings of the 26th Conference on Learning Theory (COLT), 2013*
- 11 **The Borel cardinality of Lascar strong types**  
with I. Kaplan et B. Miller  
*J. London Math. Soc. Volume 90-2 (2014), 609–630*
- 10 **Externally definable sets and dependent pairs II**  
with A. Chernikov  
*Trans. of the AMS, Volume 367-7 (2015), 5217–5235*
- 9 **Groups and fields with NTP2**  
with A. Chernikov and I. Kaplan  
*Proceedings of the AMS 143 (2015), 395–406*
- 8 **Witnessing dp-rank**  
with I. Kaplan  
*Notre Dame J. of Formal Logic, Volume 55-3 (2014), 419–429*
- 7 **Distal and non-distal NIP theories**  
*Annals of Pure and Applied Logic, Vol 164-3 (2013), 294–318*
- 6 **A note on generically stable measures and fsg groups**  
with E. Hrushovski and A. Pillay  
*Notre Dame J. of Formal Logic, Volume 53-4*
- 5 **Adding linear orders**  
with S. Shelah  
*J. Symbolic Logic, Vol 77 (2012), 717–725*
- 4 **Finding generically stable measures**  
*J. Symbolic Logic, Vol 77, Issue 1 (2012)*
- 3 **Externally definable sets and dependent pairs**  
with A. Chernikov  
*Israel J. of Math., Volume 194, Issue 1 (2013), 409–425*
- 2 **Generically stable and smooth measures in NIP theories**  
with E. Hrushovski and A. Pillay  
*Trans. of the AMS, 365 (2013), 2341–2366*
- 1 **On dp-minimal ordered structures**  
*J. Symbolic Logic, Vol 76, Issue 2 (2011)*

## Preprints

- 7 **On amalgamation in  $NTP_2$  theories and generically simple generics**
- 6 **Some NIP-like phenomena in  $NTP_2$**   
with I. Kaplan
- 5 **Boundedness and absoluteness of some dynamical invariants in model theory**  
with K. Krupinski and L. Newelski
- 4 **Groups with f-generics in  $NTP_2$  and PRC fields**  
with S. Montenegro and A. Onshuus
- 3 **Some remarks on dp-minimal groups**  
with I. Kaplan and E. Levi
- 2 **Henselian valued fields and inp-minimality**  
with A. Chernikov
- 1 **Definably amenable NIP groups**  
with A. Chernikov

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## Invited talks at international conferences

August 2017: Logic Colloquium, Stockholm

*Recent advances in model theory*

July 2017: Workshop on model theory and dynamics, Villa de Leyva, Colombia

*Generic types in definable groups*

July 2017: Model theory, Bedlewo

*Finitely generated dense subgroups of  $\text{Aut}(M)$*

November 2016: Permutation groups, Banff

*The affine and projective groups are maximal closed*

July 2015: Neostability theory, Oaxaca

*Decomposition of types in NIP theories*

June 2015: When topological dynamics meets model theory, Marseille

*Compact domination for NIP groups*

January 2015: VIG meeting, UCLA

*Rosenthal compacta and NIP formulas*

June 2014: LYMOTS seminar, Manchester

*Topological properties of the space of types in NIP theories*

February 2014: Model theory, arithmetic geometry and number theory, Final workshop, MSRI

*Definably amenable NIP groups*

July 2012 : Logic Colloquium, Manchester, UK. Special session

*Type decompositions in NIP theories*

January 2012 : Neostability theory, Banff, Canada

*Externally definable sets in NIP theories*

June 2011: Recent developments in model theory, Oléron

*Distal NIP Theories*

March 2011: ASL North American Annual Meeting, Berkeley

*Distal NIP Theories*

January 2010: Model Theory: Around Valued Fields and Dependent Theories, Oberwolfach

*Generically stable measures*

February 2009: Stable methods in unstable theories, Banff, Canada

*Measures in NIP theories*

## Tutorials

July 2017: SLALM 2017, Puebla, Mexico

*Groups, measures and the NIP condition*

June 2016: Thematic program on model theory, University of Notre Dame, IN

*NIP, measures and combinatorics*

January 2016: Model Theory: Groups, Geometry, and Combinatorics, Oberwolfach

*The strong Erdős-Hajnal property for distal theories*

February 2014: Model theory, arithmetic geometry and number theory, Introductory workshop, MSRI

*Introduction to model-theoretic techniques*

January 2013 : Model Theory: Groups, Geometry, and Combinatorics, Oberwolfach

*Pseudofinite structures*

## Jury member

PhD defense of Nadja Hempel, Lyon (June 2016)

PhD defense of Samaria Montenegro, Paris (June 2015)