

Artem Chernikov, CV

CONTACT INFORMATION	Department of Mathematics University of California Los Angeles Los Angeles, CA 90095-1555, USA	<code>chernikov@math.ucla.edu</code> <code>math.ucla.edu/~chernikov</code>
RESEARCH INTERESTS	Mathematical logic, more specifically model theory and its applications to algebra, geometry, combinatorics and computer science.	
CAREER	2018– 2015–2018 2013–2015 2014 2012–2013	University of California, Los Angeles Associate professor University of California, Los Angeles Assistant professor Université Paris Diderot - Paris 7 Postdoctoral fellow (Fondation Sciences Mathématiques de Paris) MSRI, Berkeley Postdoctoral fellow Hebrew University of Jerusalem Postdoctoral fellow (with Ehud Hrushovski)
EDUCATION	2009–2012 2007–2009 2002–2007	Université Claude Bernard – Lyon 1 Ph.D thesis “Sur les théories sans la propriété de l’arbre du second type”, defended on 8 Oct 2012 Advisor: Itai Ben Yaacov Humboldt University, Berlin, Germany Berlin Mathematical School, Phase I student Advisor: Andreas Baudisch State University of Telecommunications, St.Petersburg, Russia Diploma in “Information systems and technologies”, cum laude
AWARDS AND GRANTS	2020 2017–2022 2016–2019 2016 2013	Simons Fellowship NSF CAREER Research Grant DMS-1651321 (PI) NSF Research Grant DMS-1600796 (PI) Sloan Research Fellowship Sacks prize (for the best thesis of the year in mathematical logic around the world)
OTHER GRANTS / FELLOWSHIPS	2020 2019 2015–2017 2009–2012 2010 2008 2007–2008	Simons Visiting Professorship Oberwolfach / University of Konstanz (cancelled due to COVID19) NSF Conference grant DMS-1922826 (PI) <i>Model Theory of Valued Fields and Applications</i> ValCoMo - Valuations, Combinatoire et Théorie des MOdèles Université Paris 7, Partenaire du projet MALOA fellowship (Université Lyon 1) Marie Curie Initial Training Network in Mathematical Logic ECOS Nord/COLCIENCIAS fellowship Los Andes University, Bogota, Colombia MATHLOGAPS short term visiting position (Université Lyon 1) Berlin Mathematical School scholarship
RESEARCH ARTICLES AND PREPRINTS	30.	<i>Combinatorial properties of non-archimedean convex sets</i> with Alex Mennen, preprint (arXiv:2109.04591)

29. *Invariant measures in simple and in small theories*
with Ehud Hrushovski, Alex Kruckman, Krzysztof Krupinski, Slavko Moconja, Anand Pillay, Nicholas Ramsey, submitted (arXiv:2105.07281)
28. *Model-theoretic Elekes-Szabó for stable and o-minimal hypergraphs*
with Ya'acov Peterzil and Sergei Starchenko, submitted (arXiv:2104.02235)
27. *Hypergraph regularity and higher arity VC-dimension*
with Henry Towsner, preprint (arXiv:2010.00726)
26. *Zarankiewicz's problem for semilinear hypergraphs*
with Abdul Basit, Sergei Starchenko, Terence Tao and Chieu-Minh Tran, Forum of Mathematics, Sigma (2021), Vol. 9, E59, 1–23
25. *Distality in valued fields and related structures*
with Matthias Aschenbrenner, Allen Gehret and Martin Ziegler, submitted (arXiv:2008.09889)
24. *Transitivity, lowness, and ranks in NSOP₁ theories*
with Byunghan Kim and Nicholas Ramsey, submitted (arXiv:2006.10486)
23. *Definable convolution and idempotent Keisler measures*
with Kyle Gannon, Israel Journal of Mathematics, accepted (arXiv:2004.10378)
22. *On n-dependent groups and fields II*
with Nadja Hempel, Forum of Mathematics, Sigma (2021), Vol. 9, E38, 1–51
21. *Model-theoretic Elekes-Szabó in the strongly minimal case*
with Sergei Starchenko, Journal of Mathematical Logic 21.02 (2021): 2150004.
20. *Mekler's construction and generalized stability*
with Nadja Hempel, Isr. J. Math. (2019) 230: 745-769
19. *Cutting lemma and Zarankiewicz's problem in distal structures*
with David Galvin and Sergei Starchenko, Selecta Mathematica, New Ser. 26, 25 (2020)
18. *Ramsey growth in some NIP structures*
with Sergei Starchenko and Margaret Thomas, Journal of the Institute of Mathematics of Jussieu, 20(1), 1-29 (2021)
17. *Definable regularity lemmas for NIP hypergraphs*
with Sergei Starchenko, Quarterly Journal of Mathematics, accepted (arXiv:1607.07701)
16. *Henselian valued fields and inp-minimality*
with Pierre Simon, The Journal of Symbolic Logic, 84(4), 1510-1526 (2019)
15. *Regularity lemma for distal structures*
with Sergei Starchenko, J. Eur. Math. Soc. 20 (2018), 2437-2466
14. *On model-theoretic tree properties*
with Nick Ramsey, Journal of Mathematical Logic, 16(2) (2016)
13. *A note on the Erdős-Hajnal property for stable graphs*
with Sergei Starchenko, Proceedings of the American Mathematical Society 146.2 (2018): 785-790
12. *Definably amenable NIP groups*
with Pierre Simon, J. Amer. Math. Soc. 31 (2018), 609-641
11. *On n-dependence*
with Daniel Palacin and Kota Takeuchi, Notre Dame J. Formal Logic, Vol. 60, Number 2 (2019), 195-214
10. *On the number of Dedekind cuts and two-cardinal models of dependent theories*
with Saharon Shelah, Journal of the Institute of Mathematics of Jussieu, 15(4), 771-784 (2016)

9. *External definability and groups in NIP theories*
with Anand Pillay and Pierre Simon, J. London Math. Soc., 90 (1):213-240 (2014)
8. *Groups and fields with NTP_2*
with Itay Kaplan and Pierre Simon, Proceedings of the American Mathematical Society 143(1), 395–406 (2015)
7. *Valued difference fields and NTP_2*
with Martin Hils, Israel Journal of Mathematics 204(1), 299–327 (2014)
6. *An independence theorem for NTP_2 theories*
with Itai Ben Yaacov, J. Symbolic Logic, 79(1):135–153, 2014
5. *On non-forking spectra*
with Itay Kaplan and Saharon Shelah, J. Eur. Math. Soc. 18 (2016), 2821–2848
4. *Theories without the tree property of the second kind*
Annals of Pure and Applied Logic 165 (2014), pp. 695–723
3. *Externally definable sets and dependent pairs II*
with Pierre Simon, Trans. Amer. Math. Soc. 367 (2015), 5217–5235
2. *Externally definable sets and dependent pairs*
with Pierre Simon, Israel J. Math. 194 (2013), no. 1, 409–425
1. *Forking and dividing in NTP_2 theories*
with Itay Kaplan, J. Symbolic Logic, 77(1):1–20, 2012

CONFERENCE
PROCEEDINGS /
EXTENDED
ABSTRACTS

2. *Model-theoretic Elekes-Szabó*
with Ya'acov Peterzil and Sergei Starchenko, Oberwolfach Reports, Issue 2 (2020)
1. *Indiscernible sequences and arrays in valued fields*
RIMS Kokyuroku 1718, 127-131, 2010-10, Kyoto University

REVIEWS

1. *Model theory, Keisler measures and groups*
The Bulletin of Symbolic Logic, 24(3), 336-339 (2018)

LECTURE NOTES

1. *Lecture notes on stability theory*
AMS Open Math Notes, OMN:201905.110792

INVITED
CONFERENCE TALKS

54. Workshop “From Geometric Stability Theory to Tame Geometry” (Fields Institute, Toronto, Canada, Sep 2021)
53. ”Model theory and Philosophy of Mathematics” conference (Shanghai, China, Aug 2021)
52. Workshop on Trends in Pure and Applied Model Theory (Fields Institute, Toronto, Canada, Jul 2021)
51. **(Plenary)** 2021 European Summer Meeting of the Association for Symbolic Logic (Poznan, Poland, Jul 2021)
50. **(Plenary)** SoCal Discrete Math Symposium 2021 (UC Irvine, US, Apr 2021)
49. Practical and Structural Model Theory (Passau, Germany, Jul 2020) — Cancelled due to COVID19
48. Model Theory: from Geometric Stability to Tame Geometry (CIRM, Luminy, France, Jun 2020) — Cancelled due to COVID19
47. Model Theory and Applications 2020 (Cetraro, Italy, Jun 2020) — Cancelled due to COVID19

46. ULTRAMATH 2020: Ultrafilters and Ultraproducts Across Mathematics and Related Topics (Pisa, Italy, Jun 2020) — Cancelled due to COVID19
45. California Model Theory Day (UC Irvine, US, May 2020) — Cancelled due to COVID19
44. "Model Theory and its Applications", a special session at the AMS Spring Central Sectional Meeting 2020 (Purdue University, US, Apr 2020) — Cancelled due to COVID19
43. "Model Theory: Groups, Geometries and Combinatorics" (Oberwolfach workshop, Germany, Jan 2020)
42. Workshop on Recent Applications of Model Theory (Fields Institute, Toronto, Canada, Jul 2019)
41. Model theory of valued fields and applications (Münster, Germany, Jun 2019)
40. Logic Fest in the Windy City (Chicago, US, May 2019)
39. "Recent Advances in Regularity Lemmas", Special Session at the Joint Mathematics Meetings 2019 (Baltimore, US, Jan 2019)
38. Pure and Applied Model Theory (UIC, Chicago, US, Oct 2018)
37. Neostability Theory, BIRS (Oaxaca, Mexico, Oct 2018)
36. "From permutation groups to model theory" workshop (ICMS, Edinburgh, UK, Sep 2018)
35. **(Plenary)** 2018 North American Meeting of the Association for Symbolic Logic (University of Western Illinois in Macomb, Illinois, US, May 2018)
34. Workshop Model Theory and Combinatorics, Institut Henri Poincaré (Paris, France, Jan 2018)
33. "Set-theoretic and topological methods in model theory" at the Indian Statistical Institute, North-East Centre (Tezpur, India, Sep 2017)
32. "Nonstandard methods in combinatorial number theory" at the American Institute of Mathematics (San Jose, US, Aug 2017)
31. 11th Panhellenic Logic Symposium (Delphi, Greece, Jul 2017)
30. Model Theory (Bedlewo, Poland, Jul 2017)
29. Automorphism Groups, Differential Galois Theory and Model Theory (Barcelona, Spain, Jun 2017)
28. Model theory Conference, Stellenbosch University (South Africa, Jan 2017)
27. Cherlin weekend (Rutgers University, US, Oct 2016)
26. Model theory of finite and pseudofinite structures (Leeds, UK, Jul 2016)
25. International Conference on Model Theory (Notre Dame, US, Jun 2016)
24. "Model theoretic aspects of the notion of independence and dimension", 2015 RIMS Model Theory Workshop, Kyoto University (Kyoto, Japan, Dec 2015)
23. **(Plenary)** 2015 European Summer Meeting of the Association for Symbolic Logic (Helsinki, Finland, Aug 2015)
22. "When Topological Dynamics meets Model Theory", Marseille (France, Jun 2015)
21. "Model Theory, Difference/Differential Equations and Applications" at the CIRM (Luminy, France, Apr 2015)
20. Model theory Conference South Africa, Stellenbosch (South Africa, Mar 2015).
19. Classification Theory Workshop, NIMS (Daejeon, Korea, Aug 2014).
18. Logic Colloquium 2013 (Evora, Portugal, Jul 2013)

17. Model theory 2013 (Ravello, Italy, Jun 2013)
16. Research workshop “Interactions between Logic, Topological structures and Banach spaces theory”, Eilat Campus of Ben Gurion University of the Negev (Israel, May 2013)
15. MALOA Final Conference “Logic and Interactions” (CIRM, Luminy, France, Apr 2013)
14. Third MALOA Training Workshop (Oxford, GB, Aug 2012)
13. “Notions of minimality and rank in dependent theories” workshop (Villa de Leyva, Colombia, Jun 2012)
12. “15th Latin American Symposium on Mathematical Logic” (Bogotá, Colombia, Jun 2012)
11. “Neostability theory” workshop (Banff International Research Station, Canada, Jan 2012)
10. “Algebra, Combinatorics and Model Theory” (Koç University, Istanbul, Turkey, Aug 2011)
9. Second MALOA Training Workshop (Leeds, GB, Jun 2011)
8. “Día de teoría de modelos” (Los Andes University, Bogota, Colombia, Nov 2010)
7. First MALOA Training Workshop (Fischbachau, Germany, Sep 2010)
6. Model Theory conference, NIMS (Seoul, South Korea, May 2010)
5. “New developments of “independence” in model theory” (Kirishima, Japan, Mar 2010)
4. “Model Theory: Around Valued Fields and Dependent Theories” workshop (Oberwolfach, Germany, Jan 2010)
3. Model theory workshop (Wroclaw, Poland, Aug 2009)
2. “Stable methods in unstable theories” workshop (Banff International Research Station, Canada, Feb 2009)
1. “Around classification theory” workshop (Leeds, GB, Jun 2008)

INVITED SEMINAR
AND COLLOQUIUM
TALKS

60. Model theory seminar, Fields Institute (Toronto, Canada, Sep 2021)
59. **Wilhelm Killing Kolloquium**, University of Münster (Germany, Jun 2021)
58. Logic Seminar (Imperial College, London, UK, May 2021)
57. Géométrie et Théorie des Modèles (Ecole Normale Supérieure, Paris, France, Apr 2021)
56. Oxford Special afternoon in Logic and Combinatorics (Oxford, UK, Jan 2021)
55. Online seminar: Topological and Differential Expansions of O-minimal Structures (University of Konstanz, Germany, Dec 2020)
54. MSRI Model Theory Seminar (Berkeley, US, Oct 2020)
53. Online Logic Seminar (Southern Illinois University, US, Oct 2020)
52. Seminario “flotante” de Lógica Matemática de Bogotá (Universidad Nacional, Bogotá, Colombia, Sep 2020)
51. Logic Seminar (University of Notre Dame, US, Sep 2020)
50. Logic and Set Theory Seminar (UC Irvine, US, Nov 2019)
49. CUNY Logic Workshop (CUNY Graduate Center, New York, USA, Sep 2019)
48. Stevens Institute of Technology, Department Colloquium (Hoboken, US, Sep 2019)

47. Logic seminar, University of Turin (Turin, Italy, Jun 2019)
46. Séminaire de Logique, Université Lyon 1 (Lyon, France, Jun 2019)
45. USC Combinatorics Seminar (Los Angeles, US, Mar 2019)
44. UCLA Combinatorics Seminar (Los Angeles, US, Jan 2019)
43. Model theory seminar, UC Berkeley (US, Nov 2017)
42. Logic seminar, Caltech (Los Angeles, US, May 2016)
41. Logic seminar, UIC (Chicago, US, Apr 2016)
40. Caltech–UCLA Logic Seminar (Los Angeles, US, Nov 2015)
39. Théorie des Modèles et Groupes, Université Paris 7 (France, Jun 2015)
38. Model theory seminar, Wroclaw (Poland, May 2015)
37. Logic seminar, University of Turin (Italy, Mar 2015)
36. Geometry seminar, Université de Savoie - Chambéry (France, Mar 2015)
35. Special Mathematics Seminar, MIT (US, Jan 2015)
34. Logic seminar, University of Wisconsin-Madison (US, Jan 2015)
33. Model theory seminar, UC Berkeley (US, Jan 2015)
32. UCLA Department Colloquium (Los Angeles, US, Jan 2015)
31. University of Wisconsin-Madison Department Colloquium, via Skype (US, Dec 2014)
30. “Géométrie et Théorie des Modèles” at Ecole Normale Supérieure (Paris, France, Nov 2014)
29. Séminaire Arithmétique, Université Lille 1 (Lille, France, Oct 2014)
28. Model theory seminar, MSRI, Berkeley (US, May 2014)
27. Model theory seminar, CUNY Graduate Center (New York, US, May 2014)
26. Caltech–UCLA Logic Seminar (Los Angeles, US, May 2014)
25. Model theory seminar, University of California, Berkeley (US, Mar 2014)
24. Théorie des Modèles et Groupes, Université Paris 7 (France, Dec 2013)
23. Séminaire de Logique, Université Lyon 1 (France, Nov 2013)
22. “Géométrie et Théorie des Modèles” at Ecole Normale Supérieure (Paris, France, Oct 2013)
21. Set theory seminar, Hebrew University of Jerusalem (Israel, Aug 2013)
20. Model theory seminar, University of Konstanz (Germany, May 2013)
19. Logic seminar, Hebrew University of Jerusalem (Israel, Dec 2012)
18. Model theory and descriptive set theory seminar, University Lyon 1 (France, Oct 2012)
17. “Géométrie et Théorie des Modèles” at Ecole Normale Supérieure (Paris, France, Apr 2012)
16. Seminar in Logic and Set Theory, Ben-Gurion University of the Negev (Beersheba, Israel, Mar 2012)
15. Logic seminar, Hebrew University of Jerusalem (Israel, Mar 2012)
14. Logic seminar, Universität Münster (Germany, Feb 2012)
13. Séminaire général de logique (Paris, France, Jan 2012)

12. Model theory seminar + General logic seminar, Universidade de Lisboa (Portugal, Oct 2011)
11. Logic seminar at the Institut Camille Jordan (Lyon, France, Oct 2011)
10. Logic seminar, Universität Münster (Germany, Sep 2011)
9. Student seminar of the MALOA model theory semester (Lyon, France, Mar 2011)
8. Logic seminar at Universidad Nacional (Bogota, Colombia, Nov 2010)
7. Séminaire des thésards, Université Paris 7 (Paris, France, Apr 2010)
6. Logic Group seminar at the Humboldt University (Berlin, Germany, Feb 2010)
5. Logic seminar at the Institut Camille Jordan, Université Lyon 1 (Lyon, France, Nov 2009)
4. Séminaire général de logique (Paris, France, Jun 2009)
3. Logic seminar at the Institut Camille Jordan, Université Lyon 1 (Lyon, France, Mar 2009)
2. “What is...” seminar at the Freie Universität (Berlin, Germany, Jan 2009)
1. Logic Group seminar at the Humboldt University (Berlin, Germany, Jun 2008)

RESEARCH VISITS

8. Fields Institute, Toronto, Canada (Sep 2021)
7. Institut Henri Poincaré, Paris (Jan–Apr 2018)
6. Model theory group in Wroclaw (May 2015)
5. Max Planck Institute, Bonn (May–Jun 2012)
4. Logic group of the Hebrew University of Jerusalem (Mar–Apr 2012)
3. Logic group of the Münster University (Feb 2012)
2. Logic group of the Münster University (Sep 2011)
1. Bogotá Logic Group, Nov–Dec 2010

TEACHING AT UCLA

See math.ucla.edu/~chernikov/teaching.html for the details and lecture notes.

Fall	2021	Mathematical Logic and Set Theory, MATH 220A
Spring	2020	Real Analysis, MATH 131A
Winter	2020	Mathematical Logic and Set Theory, MATH 220B
Fall	2019	Pseudofinite model theory, MATH 223M
Spring	2019	Linear Algebra, MATH 115B
Winter	2019	Approximate groups and equivalence relations, MATH 285D
Fall	2018	Mathematical Logic and Set Theory, MATH 220A
Spring	2018	Model theory of groups, MATH 223M
Fall	2017	Mathematical Logic and Set Theory, MATH 220A
Spring	2017	Linear Algebra, MATH 115A
Winter	2017	Finite model theory, MATH 285D
Fall	2016	Topological Dynamics and Model Theory, participating seminar co-organized with Andrew Marks, MATH290D
Fall	2016	Model theory and combinatorics, MATH 223M
Spring	2016	Linear Algebra, MATH 115A
Winter	2016	Topics in combinatorics, MATH 285N
Fall	2015	Introduction to stability theory, MATH 285D

TEACHING ELSEWHERE		<ol style="list-style-type: none"> 6. An online video course on Real Analysis: https://youtube.com/playlist?list=PL54Pt_mZzBqjcodJ_GqXxqG1WCCmq433k 5. Mini-course “Model-theoretic aspects of regularity lemmas”, Institut Henri Poincaré (Paris, France, Jan-Feb 2018) 4. Mini-course “Introduction to geometric stability theory” at IMS Graduate Summer School in Logic, National University of Singapore (Jun 2017). 3. Mini-course “Abstract topological dynamics”, Nesin Mathematics Village, Sirince, Turkey (Sep 2014) 2. Exercise sessions for the course “Model theory and set theory” for master students, Université Paris 7, autumn 2013 / Cours fondamental 1 “Théorie des modèles et théorie des ensembles” (Université Paris 7, M2 LMFI, TD, automne 2013) 1. Mini-course on topics in model theory for graduate students, University Lyon 1 (October 2012)
POSTDOCTORAL ADVISEES	2020– 2018– 2016–2020	Kyle Gannon (Hedrick Assistant Adjunct Professor, UCLA) Nicholas Ramsey (Hedrick Assistant Adjunct Professor, UCLA) Nadja Hempel (Assistant Adjunct Professor, UCLA)
GRADUATE STUDENTS SUPERVISION	2021 2018– 2017– 2020 – 2021	Chuyin Jiang (UCLA, Directed individual study, Fall) Aaron Anderson (UCLA, ATC 2020, advisor) Alex Mennen (UCLA, ATC 2019, advisor) Alexander Johnson (UCLA, Directed individual study, co-supervised with Nick Ramsey)
PH.D THESIS COMMITTEE / REFEREE	2020 2019 2018 2017 2016	Pierre Touchard (Universität Münster) Riley Thornton (UCLA) Christian d’Elbée (University Lyon 1) Thomas Gilton (UCLA) Assaf Shani (UCLA) Samuel Dittmer (UCLA) Madeline Barnicle (UCLA) Danny Nguyen (UCLA)
UNDERGRADUATE STUDENTS SUPERVISION (INDEPENDENT STUDY/DIRECTED RESEARCH/REU)	2021 2019 2018 2017 2016 2015	Gabe Henry Woody (UCLA, Summer) Nirmay Singaram (UCLA, Fall) Jose Rosales (UCLA, Fall) Aaron Anderson (Caltech, Fall) Spencer Wyman (UCLA, Summer-Fall) Haebin Lim (Caltech, Winter) Samuel Birns (UCLA, Summer) Jesse Han (UCLA, Winter)
CONFERENCES CO-ORGANIZED		<ol style="list-style-type: none"> 5. “Model-theoretic classification program”, AMS-ASL special session at the Joint Mathematics Meeting 2022, Seattle, Jan 2022 (co-organizer, with Nick Ramsey) 4. Workshop on Model Theory and Combinatorics, Dec 2021, Fields Institute, Toronto, Canada (co-organizer, with Caroline Terry) 3. Special Session on Finite Model Theory and Descriptive Complexity, ASL 2020 annual meeting, UC Irvine (co-organizer, with Neil Immerman and Scott Weinstein) 2. Special Session in Model Theory, AMS Fall 2017 Western Sectional Meeting, UC Riverside (co-organizer, with Isaac Goldbring)

1. “Set theoretic and topological methods in model theory” at the Indian Statistical Institute, Tezpur, India, Sep 2017 (scientific committee member)

EDITORIAL WORK

1. Model Theory (Founding editor, Jul 2021–)
2. Mathematical Logic Quarterly (Editor, Jan 2020–).

EXTERNAL
COMMITTEE WORK

- ASL Membership Committee (Jan 2020–).
- NSF panel, National Science Centre of Poland, NSERC Canada, ERC grants.

UCLA
DEPARTMENTAL
SERVICE

2021– 2022	Staff Search, Undergraduate Studies
2019– 2020	Staff Search, Parties, Logic Colloquium organizer
2018– 2019	Staff Search, TPEC, Logic Colloquium organizer
2017– 2018	Graduate Admissions, Graduate Advisors, Graduate Studies, Math Development, Parties
2016– 2017	Colloquium, Parties
2015–2016	Graduate Admissions and support

REFEREED FOR

Annals of Mathematics, Duke Mathematical Journal, Advances in Mathematics, Journal of the European Mathematical Society, Discrete Analysis, Transactions of the AMS, Israel Journal of Mathematics, (Oxford) Quarterly Journal of Mathematics, Journal of the Institute of Mathematics of Jussieu, Journal of Algebra and its Applications, Notices of the AMS, Journal of Mathematical Logic, Journal of Symbolic Logic, Annals of Pure and Applied Logic, Notre Dame Journal of Formal Logic, Archive for Mathematical Logic.

REVIEWED FOR

MathSciNet, Zentralblatt MATH.

MEMBERSHIP

American Mathematical Society (since 2015), Association for Symbolic Logic (since 2014).

LANGUAGES

Russian (native), English (fluent), French (basic), German (basic).