

# ASL Logic Colloquium 2019 - Program of talks

Speakers are shown in bold. A bold topic marked with a star \* indicates an invited talk in a special session. Topics are abbreviated as:

**C** - computability

**FG** - foundations of geometry

**MT** - model theory

**PTPC** - proof theory and proof complexity

**RPML** - reflection principles and modal logic

**ST** - set theory

## Monday

### Plenary talks, Monday am

9:00-9:15 *Opening*

9:15-10:05 **Thomas Scanlon**

*Over six decades of the model theory of valued fields*

10:05-10:30 *Coffee break*

10:30-11:20 (Tutorial) **Dilip Raghavan**

*Higher cardinal invariants*

11:30-12:20 **Jan Krajíček**

*Model theory and proof complexity*

### Room B, Monday pm

14:30-15:10 (**C\***) **Laurent Bienvenu**, Barbara Csimá, Matthew Harrison-Trainor

*Some questions of uniformity in algorithmic randomness*

15:20-16:00 (**C\***) Wesley Calvert, Douglas Cenzer, **Valentina Harizanov**

*Approximately computable equivalence structures*

16:00-16:30 *Coffee break*

16:30-17:10 (**MT\***) **Angus Macintyre**

*Model theory of adèles. Arithmetic equivalence*

17:20-18:00 (**MT\***) **Francesco Parente**

*Model-theoretic properties of ultrafilters and universality of forcing extensions*

18:10-18:30 (**MT**) **John Baldwin**

*On strongly minimal Steiner systems: Zilber's conjecture, universal algebra, and combinatorics*

### Room C, Monday pm

14:30-15:10 (**PTPC\***) **Neil Thapen**

*Induction, search problems and approximate counting*

15:20-16:00 (**PTPC\***) **Sara Negri**

*Syntax for semantics*

16:00-16:30 *Coffee break*

16:30-17:10 (**PTPC\***) **Olaf Beyersdorff**

*Proof complexity of quantified Boolean formulas*

17:20-17:40 (**PTPC**) **Toshiyasu Arai**

*Some results in proof theory*

17:40-18:00 (PTPC) **Andreas Weiermann**

*A unifying approach to Goodstein principles*

18:10-18:30 (PTPC) **Sam Sanders**

*Umpteen parallel hierarchies and the Gödel hierarchy*

### **Room D, Monday pm**

14:30-14:50 (MT) **Jan Hubička**, Matěj Konečný, Jaroslav Nešetřil

*On Hrushovski properties of Hrushovski constructions*

14:50-15:10 (MT) David M. Evans, Jan Hubička, **Matěj Konečný**, Yibei Li

*Simplicity of automorphism groups of generalised metric spaces*

15:20-15:40 (MT) **Andrés Aranda**, David Hartman

*MB-homogeneous graphs*

15:40-16:00 (ST) **John Howe**

*Ramsey degrees of structures with equivalence relations*

16:00-16:30 *Coffee break*

16:30-16:50 (C) Julia Knight, **Alexandra Soskova**, Stefan Vatev

*Effective coding and decoding structures*

16:50-17:10 (C) Rumen Dimitrov, Valentina Harizanov, Andrey Morozov, **Paul Shafer**, Alexandra Soskova, Stefan Vatev

*Cohesive powers of  $\omega$*

17:20-17:40 (C) Nikolay Bazhenov, Hristo Ganchev, **Stefan Vatev**

*Computable embeddings for pairs of linear orderings*

17:40-18:00 (C) **Nikolay Bazhenov**, Manat Mustafa, Mars Yamaleev

*Computable reducibility, and isomorphisms of distributive lattices*

18:10-18:30 (C) **Robert Lubarsky**

*Feedback hyperjump*

### **Room E, Monday pm**

14:30-14:50 (FG) **Ryszard Mirek**

*Euclidean Geometry*

14:50-15:10 (FG) **Davit Harutyunyan**, Aram Nazaryan, Victor Pambuccian

*The Hajja-Martini inequality in a weak absolute geometry*

15:20-15:40 (FG) **Tatyana Ivanova**, Tinko Tinchev

*First-order theory of lines in Euclidean plane*

15:40-16:00 (FG) Philippe Balbiani, **Tinko Tinchev**

*Computability of contact logics with measure*

16:00-16:30 *Coffee break*

16:30-16:50 (RPML) **Mateusz Łełyk**

*Nonequivalent axiomatizations of PA and the Tarski Boundary*

16:50-17:10 (RPML) **Bartosz Wcisło**

*Topological models of arithmetic*

17:20-17:40 (RPML) **Mahfuz Rahman Ansari**, A V Ravishankar Sarma

*Constraints on selection function: A critique of Lewis-Stalnakers semantics for counterfactuals*

17:40-18:00 (RPML) **A. V. Ravishankar Sarma**

*Belief revision based on abductive reasoning*

18:10-18:30 (RPML) **Luciana Garbayo**

*Dependence logic & medical guidelines disagreement: an informational (in)dependence analysis*

### **Room F, Monday pm**

14:30-14:50 **Alexandre Madeira**, Manisha Jain, Manuel Martins

*Towards Invariant bisimulations for parametric multi-valued dynamic logics*

14:50-15:10 **Ryota Akiyoshi**, Andrew Arana

*On Gaisi Takeuti's philosophy of mathematics*

15:20-15:40 **Tomasz Polacik**

*Archetypal Rules: Beyond Classical Logic*

15:40-16:00 **Harold Hodes**

*Ramified-types for states of affairs*

16:00-16:30 *Coffee break*

16:30-16:50 (ST) **Sourav Tarafder**

*Foundations of mathematics in a model of paraconsistent set theory*

16:50-17:10 (ST) **Marta Vlasáková**

*Frege's attitude towards sets*

17:20-17:40 (ST) **Frode A. Bjordal**

*Capture and Array – Replacement, Specification and Choice*

17:40-18:00 (ST) **Joanna Jureczko**

*New results on partitioner-representable algebras*

18:10-18:30 (ST) **Noah Schoem**

*Destruction of ideal saturation*

## **Tuesday**

### **Plenary talks, Tuesday am**

9:00-9:50 **Zoé Chatzidakis**

*Notions of difference closures of difference fields*

9:50-10:30 *Coffee break*

10:30-11:20 (Tutorial) **Dilip Raghavan**

*Higher cardinal invariants*

11:30-12:20 **Gil Sagi**

*Logic and natural language: commitments and constraints*

### **Room B, Tuesday pm**

14:30-15:10 (MT\*) **Ayse Berkman**

*Sharp actions of groups in the finite Morley rank context*

15:20-16:00 (MT\*) **Philip Dittmann**

*Models of the common theory of algebraic extensions of the rational numbers*

16:00-16:30 *Coffee break*

16:30-17:10 (RPML\*) **Fedor Pakhomov**

*A weak set theory that proves its own consistency*

17:20-18:00 (RPML\*) **Albert Visser**

*Löb's logic and the Lewis arrow*

18:10-18:30 (RPML) **Emanuele Frittaion**

*The uniform reflection principle in second order arithmetic*

### **Room C, Tuesday pm**

14:30-15:10 (FG\*) **John Mumma**

*Diagrams and parallelism*

15:20-16:00 (FG\*) **Michael Beeson**

*On the notion of equal figures in Euclid*

16:00-16:30 *Coffee break*

16:30-17:10 (ST\*) **Andy Zucker**

*Bernoulli disjointness*

17:20-18:00 (ST\*) **Yair Hayut**

*Stationary Reflection at the successor of a singular cardinal*

18:10-18:30 (ST) **Maxwell Levine**

*Singular Cardinals of Uncountable Cofinality*

### **Room D, Tuesday pm**

14:30-14:50 (PTPC) **José M. Méndez**, Gemma Robles, Francisco Salto

*Falsity constants for two independent families of quasi-Boolean logics*

14:50-15:10 (PTPC) **Satoru Niki**, Peter Schuster

*On Scott's semantics for many-valued logic*

15:20-15:40 (ST) **Evgeny Gordon**

*On extension of Haar measure in  $\sigma$ -compact groups*

15:40-16:00 (PTPC) **Marta Gawek**, Agata Tomczyk

*Translation of Sequent Calculus into Natural Deduction for Sentential Calculus with Identity*

16:00-16:30 *Coffee break*

16:30-16:50 **Ricardo Nicolás-Francisco**, Luis Estrada-González

*Negation can be just what it has to*

16:50-17:10 (PTPC) **Luiz Carlos Pereira**, Edward Hermann Haeusler

*New ecumenical systems*

17:20-17:40 (PTPC) Guillermo Badia, Petr Cintula, **Andrew Tedder**

*How much propositional logic suffices for Rosser's undecidability theorem?*

17:40-18:00 (PTPC) **Paolo Baldi**, Petr Cintula, Carles Noguera

*On classical and fuzzy two-layered modal logics for uncertainty: translations and proof-theory*

18:10-18:30 (PTPC) **Libor Běhouněk**

*Non-monotonic abstract multiset consequence relations*

### **Room E, Tuesday pm**

14:30-14:50 **Iaroslav Petik**

*Reading Feyerabend: from epistemic anarchism to anarchism in foundations of formal systems*

14:50-15:10 **Francisco Martinez Herrera**

*Justifications and the Lewis argument on ECQ: a relevant note*

15:20-15:40 **James Appleby**

*Resolving Two Paradoxes About Knowledge States in the Foundations of Intuitionistic Analysis*

15:40-16:00 **Meha Mishra**, A.V. Ravishankar Sarma

*An inconsistency tolerant paraconsistent deontic logic of moral conflicts*

16:00-16:30 *Coffee break*

16:30-16:50 (MT) Dmitry Emelyanov, Beibut Kulpeshov, **Sergey Sudoplatov**

*On compositions of structures and compositions of theories*

16:50-17:10 (MT) **Inessa Pavlyuk**, Sergey Sudoplatov

*On ranks for families of theories of finite abelian groups*

17:20-17:40 (MT) **Tomáš Jakl**

*On connections between logic on words and limits of graphs*

17:40-18:00 (MT) **David Bradley-Williams**

*Canonical invariants for  $t$ -stratifications*

18:10-18:30 (MT) **Sam van Gool**

*Monadic second order logic as a model companion*

## **Room F, Tuesday pm**

14:30-14:50 (C) **Svetlana Aleksandrova**, Nikolay Bazhenov

*On  $\Sigma_n^0$ -classifications*

14:50-15:10 (C) Marta Fiori Carones, Alberto Marcone, Paul Shafer, **Giovanni Soldà**

*Reverse Mathematics of some principles related to partial orders*

15:20-15:40 (C) Michal Tomasz Godziszewski, Dino Rossegger, **Luca San Mauro**

*Quotient presentations of structures*

15:40-16:00 (C) Nikolay Bazhenov, Dino Rossegger, Luca San Mauro, **Maxim Zubkov**

*On bi-embeddable categoricity of linear orders*

16:00-16:30 *Coffee break*

16:30-16:50 (C) **Damir Zainetdinov**

*Limitwise monotonic reducibility of sets and  $\Sigma$ -definability of abelian groups*

16:50-17:10 (C) **Ilya Vlasov**

*On enumerations of families of sets of computable elements of metric spaces*

17:20-17:40 (C) **Patrick Lutz**, James Walsh

*Descending sequences of hyperdegrees and the second incompleteness theorem*

17:40-18:00 (C) **Michael Stephen Fiske**

*Quantum Random Self-Modifiable Computation*

18:10-18:30 (C) **Rachael Alvir**

*Scott complexity and finitely  $\alpha$ -generated structures*

## Wednesday

### Plenary talks, Wednesday am

9:00-9:50 **Samson Abramsky**

*Relating Structure and Power: a junction between categorical semantics, model theory and descriptive complexity*

9:50-10:30 *Coffee break*

10:30-11:20 (Tutorial) **Michael Rathjen**

*Well-ordering principles in proof theory and reverse mathematics*

11:30-12:20 **Vincenzo de Risi**

*Drawing Lines through Rivers and Cities. The Meaning of Postulates from Euclid to Hilbert*

## Thursday

### Plenary talks, Thursday am

9:00-9:50 **Ulrich Kohlenbach**

*Local proof-theoretic foundations, proof-theoretic tameness and proof mining*

9:50-10:30 *Coffee break*

10:30-11:20 (Tutorial) **Michael Rathjen**

*Well-ordering principles in proof theory and reverse mathematics*

11:30-12:20 **Rineke Verbrugge**

*Zero-one laws for provability logic and some of its siblings*

### Room B, Thursday pm

14:30-15:10 (RPML\*) **Emil Jeřábek**

*Arithmetical and propositional reflection principles*

15:20-16:00 (RPML\*) **Ali Enayat**

*Some recent news about truth theories*

16:00-16:30 *Coffee break*

16:30-17:10 (C\*) **Noah Schweber**

*More effective cardinal characteristics*

17:20-18:00 (C\*) **Denis Hirschfeldt**

*Computability theory, reverse mathematics, and Hindman's Theorem*

### Room C, Thursday pm

14:30-15:10 (FG\*) **Pierre Boutry**

*Towards an independent version of Tarski's system of geometry*

15:20-16:00 (FG\*) **Gianluca Paolini**

*First-order model theory of free projective planes*

16:00-16:30 *Coffee break*

16:30-17:10 (ST\*) **Daniel T. Soukup**

*Through the lense of uniformization*

17:20-18:00 (ST\*) **Heike Mildenberger**, Saharon Shelah

*Generalised Miller forcing may collapse cardinals*

## **Room D, Thursday pm**

14:30-14:50 (MT) Sergey Davidov, Senik Alvrtsyan, **Davit Shahnazaryan**

*Invertible binary algebras principally isotopic to a group*

14:50-15:10 (MT) **Rosario Mennuni**

*Product of invariant types modulo domination-equivalence*

15:20-15:40 (MT) Alice Medvedev, **Alexander Van Abel**

*The Feferman-Vaught Theorem and products of finite fields*

15:40-16:00 (MT) **Johan Lindberg**

*Constructive semantics and the Joyal-Tierney representation theorem*

16:00-16:30 *Coffee break*

16:30-16:50 (RPML) **Joost Joosten**

*Hyperarithmetical Turing progressions*

16:50-17:10 (RPML) **Taishi Kurahashi**

*Derivability conditions and the second incompleteness theorem*

17:20-17:40 (RPML) Larisa Maksimova, **Veta Yun**

*On strong recognizability of the intuitionistic logic*

17:40-18:00 (RPML) **Ilya Shapirovsky**

*Satisfiability problems on sums of Kripke frames*

## **Room E, Thursday pm**

14:30-14:50 (PTPC) Anahit Chubaryan, **Artur Khamisyan**

*On the proof complexity in two universal proof system for all versions of many-valued logics*

14:50-15:10 (PTPC) Anahit Chubaryan, **Garik Petrosyan**, Sergey Sayadyan

*Monotonous and strong monotonous properties of some propositional proof systems for Classical and Non Classical Logics*

15:20-15:40 (PTPC) **Satoru Kuroda**

*On Takeuti-Yasumoto forcing*

15:40-16:00 (PTPC) **Martin Maxa**

*Feasible incompleteness*

16:00-16:30 *Coffee break*

16:30-16:50 **Oguz Korkmaz**

*Belief as a quantum bit*

16:50-17:10 **Pavel Arazim**

*Logical systems as pedagogical and perhaps existential games*

17:20-17:40 Luis Estrada-González, Claudia, **Lucía Tanús-Pimentel**

*Content-sharing in relevant mathematics*

17:40-18:00 (MT) **Emanuele Bottazzi**

*An existence result for a class of partial differential equations*

## Room F, Thursday pm

14:30-14:50 (PTPC) **Yong Cheng**

*The limit of incompleteness for Weak Arithmetics*

14:50-15:10 (PTPC) Amirhossein Akbar Tabatabai, **Raheleh Jalali**

*On the logical implications of proof forms*

15:20-15:40 (PTPC) **Andrei Sipos**

*Bounds on strong unicity for Chebyshev approximation with bounded coefficients*

15:40-16:00 (PTPC) **Ranjan Mukhopadhyay**

*Cut elimination and Restall's defining rules*

16:00-16:30 *Coffee break*

16:30-16:50 (PTPC) **Mattias Granberg Olsson**, Graham Leigh

*Partial conservativity of  $ID^i_1$  over Heyting arithmetic via realizability*

16:50-17:10 (PTPC) **Iris van der Giessen**

*Intuitionistic provability logic*

17:20-17:40 (PTPC) **Anna Glenszczyk**

*Intuitionistic control logic: an overview*

17:40-18:00 (PTPC) **Joachim Mueller-Theys**

*Multi-valued interpretations*

## Friday

### Plenary talks, Friday am

9:00-9:50 **Oswaldo Guzman**

*The ultrafilter and almostdisjointness numbers*

9:50-10:30 *Coffee break*

10:30-11:20 **Martin Ziegler**

*Logic of Computing with Continuous Data: Foundations of Numerical Software Engineering*

11:30-12:20 **Matthew Harrison-Trainor**

*Describing countable structures*

### Room B, Friday pm

14:30-15:10 (PTPC\*) **Pedro Pinto**

*Proof mining with the bounded functional interpretation*

15:20-16:00 (PTPC\*) **Bahareh Afshari**

*An infinitary treatment of fixed point modal logic*

16:00-16:30 *Coffee break*

16:30-17:10 (PTPC\*) **Thomas Powell**

*A new application of proof mining in the fixed point theory of uniformly convex Banach spaces*

17:20-17:40 (PTPC) **Andrzej Indrzejczak**

*Admissibility of Cut for Sequent Calculus related to  $n$ -labelled Tableaux*

17:40-18:00 (PTPC) José Espírito Santo, **Gilda Ferreira**

*An embedding of IPC into  $F_{at}$  not relying on instantiation overflow*



18:10-18:30 (PTPC) **Franco Parlamento**, Flavio Previale, Federico Munini  
*The subterm property for some equality sequent calculi*

### **Room C, Friday pm**

14:30-14:50 (MT) **Aleksander Iwanow**

*Pseudocompact unitary representations of finitely generated groups*

14:50-15:10 (MT) **Hirotaka Kikyo**

*On automorphism groups of Hrushovski's pseudoplanes in rational cases*

15:20-15:40 (MT) **Christian Espindola**

*Preservation theorems for strong first-order logics*

15:40-16:00 (MT) **Miguel Campercholi**

*Dominions in filtral quasivarieties*

16:00-16:30 *Coffee break*

16:30-16:50 (MT) **Michael Lieberman**, Jiří Rosický, Sebastien Vasey

*Weak factorization systems and stable independence*

16:50-17:10 (MT) **Sebastien Vasey**

*Forking and categoricity in non-elementary model theory*

17:20-17:40 (MT) **Thomas Kucera**, Marcos Mazari-Armida

*On universal modules with pure embeddings*

17:40-18:00 (MT) **Pedro H. Zambrano**

*Tameness in classes of generalized metric structures: quantale-spaces, fuzzy sets, and sheaves*

18:10-18:30 (MT) **Junguk Lee**, Daniel Max Hoffmann

*Elementary theories of PAC structures via Galois groups*

### **Room D, Friday pm**

14:30-14:50 (ST) **Borisa Kuzeljević**

*Antichains of copies of ultrahomogeneous structures*

14:50-15:10 (ST) **Dorottya Sziráki**

*Perfect sets and games on generalized Baire spaces*

15:20-15:40 (ST) **Jaroslav Šupina**

*Cardinal invariants and ideal convergence*

16:00-16:30 *Coffee break*

16:30-16:50 (RPML) **Tadeusz Litak**

*Algebras for preservativity*

16:50-17:10 (RPML) **Igor Sedlár**

*Fixpoints in generalized Lambek calculus*

17:20-17:40 (RPML) Joseph Boudou, Martínn Diéguez, **David Fernández-Duque**

*A Complete Intuitionistic Temporal Logic for Topological Dynamics*

17:40-18:00 (RPML) **Sergey Drobyshovich**, Sergei Odintsov

*Towards a classification of algebraizable FDE-based modal logics*

18:10-18:30 (RPML) **Amirhossein Akbar Tabatabai**

*The BHK interpretation: looking through Gödel's classical lens*

## **Room E, Friday pm**

14:30-14:50 Thomas Macaulay Ferguson, **Elisangela Ramirez-Camara**

*The Limit of the Strict-Tolerant Hierarchy is Essentially Classical and Even If It's Just LP, That's Probably Okay.*

14:50-15:10 **Sena Bozdog**

*A hyperintensional and paraconsistent approach to belief dynamics*

15:20-15:40 Vedran Čačić, Marko Doko, **Marko Horvat**

*Rearranging absolutely convergent well-ordered series in Banach spaces*

15:40-16:00 **Vedran Čačić**, Egor V. Kostylev, Juan L. Reutter, Domagoj Vrgoč

*Complexity of some fragments of description logics*

16:00-16:30 *Coffee break*

16:30-16:50 (FG) **David Pierce**

*Apollonian proof*

16:50-17:10 (FG) **Piotr Błaszczyk**

*Axioms for Euclid's Elements book V, their consequences and some independence results*

17:20-17:40 (FG) **Marlena Fila**, Piotr Błaszczyk

*Limits of diagrammatic reasoning*

17:40-18:00 (FG) **Grzegorz Sitek**

*Mereological model of arithmetic of natural and real numbers*

## **Room F, Friday pm**

14:30-14:50 (C) Alexey Ryzhkov, **Alexey Stukachev**, Marina Stukacheva

*Interval semantics for natural languages and effective interpretability over the reals*

14:50-15:10 (C) Manat Mustafa, **Sergey Ospichev**

*About Rogers semilattices of finite families in Ershov hierarchy*

15:20-15:40 (C) **Natalia Korneeva**

*Prefix decidable infinitewords for natural subsets of the set of context-free languages*

15:40-16:00 (C) Andrey Morozov, **Jamalbek Tussupov**

*On minimal elements in the  $\Delta$ -reducibility on families of predicates*

16:00-16:30 *Coffee break*

16:50-17:10 **Ludovica Conti**

*One or more Logicisms*