四川大學
SICHUAN UNIVERSITY

The 11th International Symposium on Domain Theory and its Applications

第十一届Domain理论及其应用国际学术研讨会

ISDT2026 Conference Program

会议手册

Organized by: School of Mathematics, Sichuan University

主办单位：四川大学数学学院



August 4-8, 2026

2026年8月4日至8日

Chengdu, China

中国·成都


四川大学

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I. Registration and Accommodation

Registration Time: August 4, 10:00 - 22:00

Hotel Name: Xiangyu Hotel (祥宇宾馆)

Address: 103 Xinnan Road, Wuhou District, Chengdu
(成都市武侯区新南路103号)

Conference Dates and Venue

Dates: August 5–7, 2026

会议时间：**8月5日-7日**

Venue: Xiangrui Hall, 3rd Floor, Xiangyu Hotel

会议地点：祥宇宾馆三楼祥瑞厅



II. Scientific and Program Committee

Chairs:

Achim Jung (University of Birmingham, UK)
Qingguo Li (Hunan University, China)
Guo-Qiang Zhang (UTHealth Houston, USA)
Bin Zhao (Shaanxi Normal University, China)

Members:

Ulrich Berger (Swansea University, UK)
Yixiang Chen (East China Normal University, China)
Abbas Edalat (Imperial College London, UK)
Martin Escardo (University of Birmingham, UK)
Yuxi Fu (Shanghai Jiao Tong University, China)
Jean Goubault-Larrecq (ENS Paris-Saclay, France)
Sang-Eon Han (Chungbuk National University, South Korea)
Yasunao Hattori (Shimane University, Japan)
Qingyu He (Yangzhou University, China)
Wei He (Nanjing Normal University, China)
Weng Kin Ho (Nanyang Technological University, Singapore)
Xiaodong Jia (Hunan University, China)
Hui Kou (Sichuan University, China)
Jimmie Lawson (Louisiana State University, USA)
Yongming Li (Shaanxi Normal University, China)
Shou Lin (Minnan Normal University, China)
Huawen Liu (Shandong University, China)
Maokang Luo (Sichuan University, China)
Zhenchao Lyu (Sichuan University, China)
Michael Mislove (Tulane University, USA)
Andrew Moshier (Chapman University, USA)
Lili Shen (Sichuan University, China)
Fugui Shi (Quanzhou Normal University, China)
Dieter Spreen (University of Siegen, Germany)
Kaiyun Wang (Shaanxi Normal University, China)
Longchun Wang (Qufu Normal University, China)
Guohua Wu (Nanyang Technological University, Singapore)
Xiaoyong Xi (Yancheng Teachers University, China)
Luoshan Xu (Yangzhou University, China)
Xiaoquan Xu (Minnan Normal University, China)
Yichuan Yang (Beihang University, China)
Zhongqiang Yang (Guangxi Minzu University, China)
Wei Yao (Nanjing University of Information Science and Technology, China)
Dexue Zhang (Sichuan University, China)
Dongsheng Zhao (Nanyang Technological University, Singapore)



III. Organizing Committee and Local Support Team

Chairs: Zeng Lian (Dean of the School of Mathematics, Sichuan University)
Hui Kou (Vice Dean of the School of Mathematics, Sichuan University)

Members: Yuxu Chen(chenyuxu@scu.edu.cn)
Jialiang He(jialianghe@scu.edu.cn)
Hongliang Lai(hllai@scu.edu.cn)
Zhenchao Lyu (zhenchaolyu@scu.edu.cn)
Lili Shen (shenlili@scu.edu.cn)
Dexue Zhang(dxzhang@scu.edu.cn)



IV. Conference Program

August 4, 10:00 -22:00
Registration Xiangyu Hotel（祥宇宾馆一楼接待处）

August 5
Xiangrui Hall, 3rd Floor, Xiangyu Hotel
（祥宇宾馆三楼祥瑞厅）

Beijing Time		Title	Chair
AM	08:30-09:00	Opening Ceremony and Group Photo	Hui Kou
	09:00-09:45	**Xiaoquan Xu (Minnan Normal University)** Some recent advances in domain theory and non-Hausdorff topology	Yixiang Chen
	09:45-10:15	**Xiaoyong Xi (Yancheng Teachers University)** On Maximal Points Spaces of Ideal Domains	
	10:15-10:35	Tea Break	
	10:35-11:20	**Ulrich Berger (Swansea University)** On the computational content of Tarski's fixed point theorem	Wei He
	11:20-11:50	**Qingyu He (Yangzhou University)** The unified approach to some weakly well-filtered spaces via Smyth power spaces	
	12:00-14:00	Buffet: Xiangjin Hall, 2nd floor, Xiangyu Hotel 自助餐：祥宇宾馆二楼祥景厅	
PM	14:20-15:05	**Amin Farjudian (University of Birmingham)** Robust Topology and Quantale-Valued Metric Spaces	Lili Shen
	15:05-15:50	**Xiaodong Jia (Hunan University)** Countable Structures in Domain Theory and Non-Hausdorff Topology: Algebraicity, Spectrality, and Forbidden Substructure	
	15:50-16:10	Tea Break	
	16:10-16:55	**Guohua Wu (Nanyang Technological University)** Ordinal ranks in mathematical structures	Luoshan Xu
	16:55-17:25	**Wei Luan (Hunan Normal University)** <<-separating domains and function spaces	Xueping Wang
	17:25-17:55	**Lihong Xie (Wuyi University)** Quotient homomorphisms of Topological MV-Algebras and Applications	
	18:30	Banquet: Xiangyun Hall, 1st floor, Xiangyu Hotel 晚宴：祥宇宾馆一楼祥云厅	

August 6 Xiangrui Hall, 3rd Floor, Xiangyu Hotel （祥宇宾馆三楼祥瑞厅）			
Beijing Time		Title	Chair
AM	08:30-09:15	**Zhenchao Lyu (Sichuan University)** FS-domains are not always RB-domains	Huawen Liu
	09:15-10:00	**Marco Abbadini (Université catholique de Louvain)** On the symmetry between openness and compactness	Hongjun Zhou
	10:00-10:20	Tea Break	
	10:20-11:05	**Jing Lu (Shaanxi Normal University)** Convergences in To spaces	Conghua Yan
	11:05-11:35	**Chongxia Lu (Ningbo University)** Equality of the Isbell and Scott topologies on function spaces	
	12:00-14:00	Buffet: Xiangjin Hall, 2nd floor, Xiangyu Hotel 自助餐：祥宇宾馆二楼祥景厅	
PM	14:20-15:05	**Stefan Milius (Friedrich-Alexander-Universität Erlangen-Nürnberg)** Terminal Coalgebras for Finitary Functors	Zhongqiang Yang
	15:05-15:35	**Xianglong Ruan (Shaanxi Normal University)** Representation and duality for CKL-algebras	Wei Yao
	15:35-16:05	**Changchun Xia (Northwestern Polytechnical University)** Representing topological spaces and three-valued topological spaces via quantum spaces	
	16:05-16:25	Tea Break	
	16:25-17:10	**Pietro Di Gianantonio (University of Udine)** A Domain-Theoretic Framework for Random Variables, Conditional Probability and Bayesian Updating	Qingguo Li
	17:10-17:40	**Zhongxi Zhang (Yantai University)** A Unified Characterization of Reflective Subcategories of Z-closure Spaces	Longchun Wang
	17:40-18:10	**Yuxu Chen (Sichuan University)** Formalizing Domain Theory in the Age of AI	
	18:30-21:00	Buffet: Xiangjin Hall, 2nd floor, Xiangyu Hotel 自助餐：祥宇宾馆二楼祥景厅	

August 7 Xiangrui Hall, 3rd Floor, Xiangyu Hotel （祥宇宾馆三楼祥瑞厅）	
Beijing Time	**Title**
08:30-17:30	Free Discussion
August 8: Departure	

V. Titles, Abstracts, and Short Biographies

(1)Talks on August 5, 2026

Keynote Speaker: Xiaoquan Xu (Minnan Normal University, China)
Title: Some recent advances in domain theory and non-Hausdorff topology
Abstract: In this talk, we briefly review some important advances achieved in domain theory and non-Hausdorff topology over the past decade, with particular emphasis on significant results concerning sober spaces, well-filtered spaces, d-spaces and some related spaces, and also list a number of remaining problems.
Biography: Xiaoquan Xu earned his bachelor's degree from Jiangxi University in 1983, followed by a master's degree in mathematics from Sichuan University in 1989. He graduated from Sichuan University with a Doctor of Science degree in 2004, and received the national award for 100 excellent doctoral dissertations in 2007. In 1995, Xu was promoted to Professor in the Department of Mathematics at Jiangxi Normal University. He is now a Level-2 Professor at the School of Mathematics and Statistics, Minnan Normal University, and serves as a doctoral supervisor in fundamental mathematics at Sichuan University, Capital Normal University and Jiangxi Normal University. Xu was a recipient of the Special Government Allowance from the State Council in 1995 and a Young and Middle-aged Expert with Outstanding Contributions to the Country in 1998. From 2007 to 2022, Xu served as a member of the Steering Committee for Teaching Mathematics in Higher Education under the Ministry of Education.

His research mainly focuses on general topology, domain theory and lattice theory. He has published more than 100 papers in several respected journals, including Transactions of the American Mathematical Society, Proceedings of the American Mathematical Society, Fundamenta Mathematicae, and Topology and its Applications. He has authored two monographs published by Science Press, and has won three ministerial and provincial-level science and technology awards.

Speaker: Xiaoyong Xi (Yancheng Teachers University, China)
Title: On Maximal Points Spaces of Ideal Domains
Abstract: The space of maximal points plays a crucial role in Domain Theory, serving as a bridge for its applications to other disciplines and embodying the structuralist philosophy of the Bourbaki school. Keye Martin and Frank Stephan characterized the maximal points spaces of continuous domains in terms of the strong Choquet game. In this talk, we will present our recent work, where, in terms of convergent Choquet-complete spaces, we try to give a characterization of the maximal point spaces of ideal domains.
Biography: Xiaoyong Xi is an Associate Professor in the School of Mathematics and Statistics at Yancheng Teachers University, Jiangsu. He received his Ph.D. from Sichuan University in 2005. He has long been engaged in research on Domain Theory and Topology, and has achieved a series of results: (1) In collaboration with Professor Zhao Dongsheng, he proposed the "Xi-Zhao model," which provides a new theoretical tool for the study of maximal point spaces; (2) In collaboration with scholars such as Kou Hui, he partially solved the well-known Amadio-Curien; open problem in the study of stable domain categories. He has led three projects funded by the National Natural Science Foundation of China. He has published over 40 academic papers in journals such as《Fuzzy Sets and Systems》,《Theoretical Computer Science》and《Information and Computation》.

Keynote Speaker: Ulrich Berger (Swansea University, UK)
Title: On the computational content of Tarski's fixed point theorem
Abstract: Tarski's fixed point theorem is a result in classical mathematics that can be used as a justification for various computationally meaningful induction and coinduction principles in constructive mathematics. While Tarski's theorem can be proven in intuitionistic higher-order logic and therefore has computational content, this content is quite different from (and less useful than) that of induction and coinduction in constructive mathematics. We show that Tarski's theorem can be directly assigned computational content that matches the one assigned to induction and coinduction. In the talk we will stress the role of domains as a crucial link between classical denotational and constructive operational semantics.
Biography: Ulrich Berger (PhD Munich) is a Reader at Swansea University. His research areas are Logic, Proof Theory, Domain Theory, Normalization Techniques, Computable Analysis, and Program Extraction. He has published around 70 research articles in major logic and computer science journals such as MSCS, APAL, LMCS, JAR, as well as proceedings of conferences such as LICS, CSL, and CiE. He is editor of the Archive for Mathematical Logic and has been guest editor of 11 special issues of the journals APAL, TCS, MSCS, and others. He is Board member of EACSL, Steering Committee member of the conference series CCC and has served on and was chair of numerous Programme Committees of major logic and computer science conferences (e.g. CSL, CiE, LICS, MFPS, CCC, CLaC). He was co-organizer of many major Logic and Computability conferences (e.g. Domains, CiE, Logic Colloquium of the ASL, BLC). He has also been awarded several research grants from various British funding bodies such as EPSRC, LMS, Heilbronn Institute, and is or was co-investigator in several International Research Collaboration Projects (Computal, Corcon, CID, NFFC).

Speaker: Qingyu He (Yangzhou University, China)
Title: The unified approach to some weakly well-filtered spaces via Smyth power spaces
Abstract: In this topic, we will use the unified approach proposed by Li et al. to study well-filtered spaces and some weakly well-filtered spaces, including weak well-filtered spaces, bounded well-filtered spaces, PF-well-filtered spaces and k-bounded well-filtered spaces. The Smyth power space $Q(X)$ of a topological space X is the set of all nonempty compact saturated subsets of X endowed with the upper Vietoris topology. By means of the unified approach, we obtain that (i) a T_0 space X is weak well-filtered iff $Q(X)$ is weak well-filtered iff $Q(X)$ is bounded well-filtered iff $Q(X)$ is a weak d-space and $\Omega(Q(X))$ is a consistent dcpo; (ii) for a T_0 space X, $Q(X)$ is a k-bounded well-filtered space iff $Q(X)$ is a weak d-space; (iii) the bounded well-filteredness (resp., PF-well-filteredness, k-bounded well-filteredness, weak monotone convergence) of X is not preserved by the Smyth power space $Q(X)$ generally. Furthermore, we deduce that the category of all PF-well-filtered spaces (resp., k-bounded well-filtered spaces) is not reflective in the category of all T_0 spaces, and the category of all bounded well-filtered spaces is reflective in the category of all T_0 spaces.
Biography: Qingyu He is an associate professor and master's supervisor at the School of Mathematics, Yangzhou University, China. He received his Ph.D. degree from Yangzhou University, with research interests focused on Domain Theory.

His related research findings have been published in academic journals including Topology and its Applications, Theoretical Computer Science, Results in Mathematics, and Algebra Universalis. He has co-authored two academic monographs, Fundamentals of Applied Topology and Applied Topology, which were officially published by Science Press. He served as principal investigator for and completed the Youth Project of the National Natural Science Foundation of China, as well as the Youth Project of the Natural Science Foundation of Jiangsu Province, China.

Keynote Speaker: Amin Farjudian (University of Birmingham, UK)
Title: Robust Topology and Quantale-Valued Metric Spaces
Abstract: Robustness with respect to small perturbations of parameters is desirable in any system (e.g., machine learning or cyber-physical systems), and vital in safety-critical systems. To measure perturbations, the state space must have a metric structure. Due to factors such as finite precision of physical measurements and inaccuracies that are inherent in any mathematical model, we consider robustness of maps over the powerset of the state space, which is equivalent to continuity with respect to the so-called robust topology on the powerset. The robust topology is non-Hausdorff, and as such, cannot be metrized using classical metrics.

We introduce the category of continuous quantale-valued metric spaces and uniformly continuous maps as a unified framework for robustness analysis, in the sense that the robust topology is captured by the quantale-valued metric associated with a lifting of the powerset monad, which we call the Hausdorff-Smyth monad. We show that every topology arises from a continuous quantale-valued metric, which demonstrates the generality of our framework.

This is joint work with Francesco Dagnino and Eugenio Moggi (University of Genoa, Italy).
Biography: Amin Farjudian obtained his PhD in domain theory under the supervision of Achim Jung. He has published in several areas of mathematics and computer science, including domain theory, ordinary and partial differential equations, eigenvalue problems, symmetrization, and rearrangements of functions.Amin is an associate professor at the School of Mathematics at the University of Birmingham (UK), where his research is focused on topology and domain theory.

Keynote Speaker: Xiaodong Jia (Hunan University, China)
Title: Countable Structures in Domain Theory and Non-Hausdorff Topology: Algebraicity, Spectrality, and Forbidden Substructure
Abstract: In this talk, I would like to give a brief survey of some old and recent results in domain theory and non-Hausdorff topology that are related to countability, and explain our newly discovered results: that countable domains are algebraic; a characterization of when countable frames have Scott spaces as their spectrum spaces; and the role that countability plays in finding forbidden substructures of Lawson compactness on domains. This talk is based on joint work with Qingguo Li and Wei Luan, with Rongqi Xiao, and with Xiaoyong Xi.
Biography: Xiaodong Jia is an associate professor and doctoral supervisor at the School of Mathematics, Hunan University. He received his PhD from the University of Birmingham,

under the supervision of Achim Jung. He holds the titles of Furong Young Scholar of Hunan Province and YueluScholar of Hunan University. His research interests lie in domain theory and non-Hausdorff topology. His work has appeared in venues including the Journal of the ACM, LICS, POPL, the Bulletin of the London Mathematical Society, the Journal of the London Mathematical Society, Topology and its Applications, and Logical Methods in Computer Science.

Keynote Speaker: Guohua Wu (Nanyang Technological University, Singapore)
Title: Ordinal ranks in mathematical structures
Abstract: Ordinal ranks play a central role in analyzing various mathematical structures, from Cantor-Bendixson theorem to Ulm's decomposition theorem. Kechris and Louveau's paper (1990) provides in [3] several ordinal ranks of Baire one functions, including oscillation ranks, convergence ranks, separation ranks, and so on. Ershov worked on ordinal ranks in 1999 in [1], where he raised the notion of d-ranks when he obtained d-completions by applying transfinite induction, and proved in [2] that any ordinal is the d-rank of some T_0 space. In this talk, we will review these known results and present our recent work on this topic.
References
[1] Yu. L. Ershov, On d-spaces, Theor. Comp. Soc. 224 (1999), 59-72.
[2] Yu. L. Ershov, The d-rank of a topological space, Algebra and Logic 56 (2017), 98-107.
[3] A. S. Kechris and A. Louveau, A classification of Baire class 1 functions, Trans. Amer. Math. Soc. 318 (1990), 209-236.
Biography: Guohua Wu, associate professor at School of Physical and Mathematical Sciences, Nanyang Technological University Singapore. He joined NTU in 2005 and his research is mainly focused on computability theory and mathematical logic, and effective aspects in analysis and algebra. He has published in several leading journals in logic, including JSL, JML, APAL, etc.

Speaker: Wei Luan (Hunan Normal University, China)
Title: <<-separating domains and function spaces
Abstract: A dcpo L is called a <<-separating domain if there is an approximate identity D such that $\delta(x)<<x$ for all $\delta \in D$ and $x \in$ L. We mainly study function spaces of <<-separating domains. It is proved that: (1) the function space from an FS-domain to a <<-separating domain is <<-separating; (2) the function space from a strong-compact space to a <<-separating domain is <<-separating; (3) the function space from a Noetherian space to an FS-domain is <<-separating. Additionally, the function space topologies, algebraic <<-separating domains, and their interactions with Lawson-compact algebraic domains and bifinite domains are discussed.
Biography: Wei Luan is an Associate Professor in School of Mathematics and Statistics, Hunan Normal University. He received his PhD from Beihang University, and subsequently completed his postdoctoral research at Hunan University, supervised by Professor Qingguo Li. His research focuses primarily on Domain theory and logical algebras. He has published research papers in journals including Topology and its Applications, Semigroup Forum, Theoretical Computer Science, Fuzzy Sets and Systems, and Bulletin of the London Mathematical Society.

Speaker: Lihong Xie (Wuyi University, China)

Title: Quotient homomorphisms of Topological MV-Algebras and Applications

Abstract: For a topological group, the quotient map modulo a subgroup is open and the quotient map modulo a compact subgroup is perfect. In this talk, we prove and develop the corresponding compact-ideal theory for topological MV-algebras. We show that if I is an ideal of a topological MV-algebra A, then the natural quotient homomorphism q from A to A/I, where A/I is endowed with the quotient topology, is a continuous open quotient map and A/I is again a topological MV-algebra. If, in addition, I is compact, then q is perfect.

As applications, we study three-space phenomena in topological MV-algebras. Under compact-kernel hypotheses we prove three-space theorems for compactness, local compactness, sigma-compactness, Lindelöfness and paracompactness under the separation hypotheses stated below. We also prove a first-countability three-space theorem for locally convex topological MV-algebras.

Biography: Lihong Xie, Ph.D., Professor, and Master's Supervisor at Wuyi University. His primary research area is topological algebra. He has published more than 50 research papers in internationally renowned journals, including Fuzzy Sets and Systems, Topology and Its Applications, and Monatshefte für Mathematik. He has contributed to several problems raised by distinguished topological algebra experts such as Arhangel'skii, Tkachenko, and Sanchis. He has served as Principal Investigator for one Youth Program of the National Natural Science Foundation of China, one NSFC Tianyuan Fund project, two Natural Science Foundation projects of Guangdong Province, and two projects from the Department of Education of Guangdong Province.

(2)Talks on August 6, 2026

Keynote Speaker: Zhenchao Lyu (Sichuan University, China)
Title: FS-domains are not always RB-domains
Abstract: We establish that Lawson's planar closed-disk domain is not an RB-domain. This domain is the dcpo consisting of all closed disks in the Euclidean plane, with the whole plane adjoined as the bottom element and ordered by reverse inclusion. Since this domain is known to be an FS-domain, it provides a concrete counterexample that separates FS-domains from RB-domains. Consequently, our result negatively resolves the longstanding open problem in domain theory of whether the two classes coincide.
Biography: Zhenchao Lyu is currently an associate professor in the School of Mathematics at Sichuan University, primarily working on problems in order-theoretic topology. He received his Ph.D. in 2018 from the School of Mathematics, Sichuan University, and conducted postdoctoral research at ENS Paris-Saclay (France) from 2018 to 2019. He has received funding for two projects from the National Natural Science Foundation of China and has published multiple papers in journals including Topology and its Applications, Theoretical Computer Science, and Mathematical Structures in Computer Science.

Keynote Speaker: Marco Abbadini (Université catholique de Louvain, Belgium)
Title: On the symmetry between openness and compactness
Abstract: Stone duality for bounded distributive lattices establishes a dual categorical equivalence between the category of bounded distributive lattices and the category of spectral spaces.

An appealing feature of the class of spectral spaces is that it has a symmetry between the notion of open set and that of a compact saturated set, due to the fact that the set of complements of compact saturated sets is the topology of another spectral space.

This symmetry is also present in the the larger setting of stably compact spaces as nicely emphasized in the paper "On the Duality of Compact vs. Open" by Jung and Suenderhauf. In that same paper, the authors obtain an interesting duality for stably compact spaces, which generalizes Stone's one for spectral spaces.

In fact, the interaction between open sets and compact saturated sets is often at the heart of Stone-like dualities. Although not always we have a perfect symmetry between the two notions, often we have a partial one. For example, sober spaces (which are dually equivalent to spatial frames) are well-filtered, a property that is a perfectly symmetrical companion of the very definition of compactness.

I will present joint work with Achim Jung in which we enlarge the duality between sober spaces and spatial frames in a way such that openness and compactness are symmetrical. On the spatial side of the duality we have objects that resemble bitopological spaces, and on the dual side we have a two-sorted version of dcpos.

Both categories admit a self-duality, which in the spatial setting generalizes de Groot duality, and on the dual setting is akin to Lawson's self-duality for continuous domains.
Biography: I got my PhD in Mathematics at the University of Milan, Italy. Then, I have been a PostDoc researcher in Salerno then at the University of Birmingham under the supervision of Achim Jung. Now, I am a PostDoc researcher in Mathematics at the

Université catholique de Louvain, Belgium.

My main research fields are algebraic logic, which studies logic via algebraic structures, and Stone duality, which connects algebraic structures to spaces. A representative achievement of my research is a categorical duality for a class of lattice-ordered groups. This essentially amounts to a representation theorem for these structures via a bijective correspondence with certain structured spaces. It can be viewed as a common umbrella for both Stone duality for Boolean algebras and Stone-Gelfand-Yosida duality for compact Hausdorff spaces.

Keynote Speaker: Jing Lu (Shaanxi Normal University, China)
Title: Convergences in T_0 spaces
Abstract: Various notions of convergence in posets and T_0 spaces have been investigated. Of the various types of convergence, the lim-inf convergence is particularly important. It is well known that lim-inf convergence in posets was introduced to characterize continuous posets. In this talk, we lift the lim-inf convergence from dcpos to T_0 spaces via the SI-topology.
Biography: Jing Lu is an associate professor and master's supervisor at Shaanxi Normal University. She has been selected for the Young Top-notch Talent Support Program of the Sanqin Special Talent Plan in Shaanxi Province and the Young Talent Support Program of the Xi'an Association for Science and Technology, and has been awarded the Outstanding Doctoral Dissertation of Shaanxi Province. Her research focuses on order topology. She is currently the principal investigator of one NSFC General Program, and has completed one NSFC Youth Project and one General Project supported by the China Postdoctoral Science Foundation. She has published more than 20 papers in journals such as Theoretical Computer Science, Order, Topology and its Applications, Houston Journal of Mathematics, Mathematical Structures in Computer Science, Rocky Mountain Journal of Mathematics, Fuzzy Sets and Systems, and International Journal of Approximate Reasoning.

Speaker: Chongxia Lu (Ningbo University, China)
Title: Equality of the Isbell and Scott topologies on function spaces
Abstract: The function space $[X \to L]$ denotes all continuous mappings from a topological space X to a dcpo L with pointwise order. Isbell topology and Scott topology are two important topologies on the function space $[X \to L]$. The Isbell topology is always coarser than Scott topology. In 1990, Lawson and Mislove publicly raised the question "for the topological space X and a dcpo L, under what conditions on L do the Isbell and Scott topologies on $[X \to L]$ agree?". We carried out a series of discussions concerning this problem.
Biography: Chongxia Lu, Lecturer and Master's Supervisor, School of Mathematics and Statistics, Ningbo University. Her research focuses on Domain theory and non-Hausdorff topology. She currently serves as principal investigator for of the National Natural Science Foundation of China, titled Research on Spectral Spaces and Topological Properties of Directed Complete Posets. She also participates in the General Program of the National Natural Science Foundation of China, entitled Research on Several Problems of Probabilistic Power Constructions in Domain Theory. She has published more than ten papers in journals including Houston Journal of Mathematics and Topology and its Applications.

Keynote Speaker: Stefan Milius (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)
Title: Terminal Coalgebras for Finitary Functors
Abstract: We present a result that implies that an endofunctor on a category has a terminal coalgebra obtainable as a countable limit of its terminal-coalgebra sequence. It holds for finitary endofunctors preserving nonempty binary intersections on locally finitely presentable categories, assuming that the posets of strong quotients and subobjects of every finitely presentable object satisfy the descending chain condition. This allows one to adapt finiteness arguments that were originally advanced by Worrell concerning terminal coalgebras for finitary set functors. Examples include the categories of sets, posets, vector spaces, graphs, and nominal sets. A similar result is presented for the category of metric spaces (although it is not locally finitely presentable). Time permitting, we will outline a generalization that captures the result for metric spaces and the one for locally finitely presentable categories under a common roof.
Biography: Stefan Milius is professor of computer science at Friedrich- Alexander-Universität Erlangen-Nürnberg (FAU). Before joining FAU in 2012 he worked as a postdoc at the Technische Universität Braunschweig, where he obtained his PhD in 2005, for which he has won the prestigious Ackermann Award. He is the author of over 140 research articles and, together with Jiří Adámek and Lawrence Moss, a monograph on initial algebras and terminal coalgebras. His main research interests are category theory and its applications in computer science, in particular coalgebra as a general theory of state-based systems and automata. He is one of the inventors of the coalgebraic approach to the semantics of iterative processes and recursive specifications, and he has made contributions to the axiomatization of equational properties of iteration. More recently, he has worked on advancing and unifying automata theory through a new category theoretic approach to algebraic language theory.

Speaker: Xianglong Ruan (Shaanxi Normal University, China)
Title: Representation and duality for CKL-algebras
Abstract: The main purpose of this talk is to investigate the topological representation of CKL-algebras. We prove that every CKL-algebra A can be embedded into the L-algebra of up-sets of the poset of its prime ideals if and only if A is self-distributive. Based on this, we construct a duality between the category of self-distributive L-algebras and the category of H-spaces, and restrict this duality to obtain the Stone duality for Boolean algebras. Further, we prove that the category of prime KL-algebras is isomorphic to the category of posets with greatest elements, and apply this result to establish the topological duality for posets.
Biography: Xianglong Ruan is a lecturer at Shaanxi Normal University. He earned his PhD from Xi'an Jiaotong University. His research interests include order topology and logical algebras. His research results have been published in journals such as Logic Journal of the IGPL, Journal of Algebra and Its Applications, Mathematical Logic Quarterly, and Journal of Logic and Computation.

Speaker: Changchun Xia (Northwestern Polytechnical University, China)
Title: Representing topological spaces and three-valued topological spaces via quantum spaces
Abstract: As is well known, the collection of all topological open sets of a quantum space X constitutes a topology on X. This naturally raises the reverse representation problem: given an arbitrary topological space X, how can one describe the quantum spaces whose topological open sets are exactly the topology on X. In this talk , we first introduce the notion of a quantum closure operator on a complete lattice and show that the quantum operators on the complete lattice L are in one-to-one correspondence with the multiplications that turn L into a right-sided idempotent quantale. Next, we prove that every topological space has a largest quantum extension and that it admits a non-trivial quantum extension if and only if it is not a T_D-space. Moreover, we show that the category of T_D-spatial right-sided idempotent quantales and the category of T_D-quantum spaces are dually equivalent. Finally, we establish a necessary and sufficient condition for a three-valued topological space to be representable by a quantum space.
Biography: Changchun Xia, Associate Professor and Master's Supervisor at Northwestern Polytechnical University. His research interests cover order topology and logical algebra. He serves as a reviewer for Mathematical Reviews of AMS. He serves as the principal investigator for one General Program and one Young Scientists Fund Program of NSFC, as well as one General Program of the CPSF. He has published nearly 20 academic papers in journals including Order, Topol. Appl., Algebra Universalis, Theory Appl. Categ., Semigroup Forum, Fuzzy Sets Syst., among others.

Keynote Speaker: Pietro Di Gianantonio (University of Udine, Italy)
Title: A Domain-Theoretic Framework for Random Variables, Conditional Probability and Bayesian Updating
Abstract: The aim of this talk is to present tools for giving domain-based, denotational semantics to probabilistic programming. Within the traditional framework of Scott domains, we describe a rather simple construction that solves a long-standing open problem in this area. We work with the Scott domain of random variables from a standard, fixed probability space—the unit interval or the Cantor space—to any given Scott domain, and organise them into a strong commutative monad. We then turn to conditional probability. Conditioning lies at the heart of Bayesian reasoning, yet giving it a rigorous, computable meaning is delicate: as Ackerman, Freer and Roy showed, it is not computable in general, since conditioning on a non-open Borel set is not an observable, i.e. semidecidable, property. Our framework resolves this within the classical setting of Scott domains. Its key ingredient is a constructive notion of event—an event and its complement forming a disjoint pair of open sets, hence observable—which yields a computable definition of conditional probability and Bayesian updating. An extension of the above-mentioned monad also models the score operator and soft conditioning. We show that the two resulting ways of computing conditional probabilities—soft conditioning with extended random variables, and hard conditioning with trace sampling and rejection—agree. Joint work with Abbas Edalat (Imperial College London).
Biography: Pietro Di Gianantonio is a computer scientist at the University of Udine (Italy), working where programming language semantics meets mathematical analysis: real numbers, probability, derivatives—and how to compute with them exactly.

He was among the early contributors to exact real-number computation, developing domain-theoretic and coinductive approaches to arbitrary-precision arithmetic, including a formally certified implementation of the reals. He has also worked on game semantics of the lambda calculus. His recent research focuses on domain-theoretic foundations for differentiable and probabilistic programming: Dual PCF, a language combining automatic differentiation with exact real computation; a Cartesian closed category of random variables; and a computable account of conditional probability and Bayesian updating.

Speaker: Zhongxi Zhang (Yantai University, China)
Title: A Unified Characterization of Reflective Subcategories of Z-closure Spaces
Abstract: Closure spaces provide a flexible setting for studying completions, reflectivity, and categorical structures beyond ordinary topological spaces. In this talk, we consider the category of Z-closure spaces, where the closed-set lattice is required to be closed under unions of families determined by a subset system Z. This framework simultaneously covers several familiar categories, including T_0 closure spaces, T_0 topological spaces, P-spaces, convex spaces, and Alexandroff spaces. The main purpose of the talk is to present a unified characterization of reflective subcategories of the category of Z-closure spaces. After introducing Z-irreducible subsets and the associated subset system ZI, the key result shows that such a subcategory is reflective precisely when it satisfies a corresponding K-category condition, equivalently, when it can be represented as a category of Z-convergence Z-closure spaces for a subset system coarser than ZI. This also yields a general construction of reflective hulls within the category of Z-closure spaces.
Biography: Zhongxi Zhang, Ph.D., Associate Professor, School of Mathematics and Information Science, Yantai University. His research focuses on Domain theory, lattice topology, order theory, closure spaces and category theory, mainly concerning completions of posets, topological spaces and closure spaces with categorical characterizations. His research findings have been published in a series of international journals including Topology and its Applications, Order, Semigroup Forum, Mathematical Structures in Computer Science and Theoretical Computer Science. He has served as principal investigator for a project funded by the NSFC Young Scientists Fund. and two projects supported by the Shandong Provincial Natural Science Foundation.

Speaker: Yuxu Chen (Sichuan University, China)
Title: Formalizing Domain Theory in the Age of AI
Abstract: The rapid development of large language models is reshaping the practice of mathematics. As LLMs become increasingly capable of generating conjectures and proofs, mathematical practice is moving from an era of proof scarcity toward one of proof abundance, and even redundancy. The central challenge is therefore shifting from merely producing proofs to reliably verifying and understanding them. Integrating LLMs with Lean offers a promising approach to translating informal mathematics into machine-checkable formal proofs, but effective formalization workflows, high-quality training data, and comprehensive library support are urgently needed. We have developed an agent-based workflow for assisting mathematical formalization and proof verification. As an initial project, we are using this system to formalize Achim Jung's lecture notes domain theory. This talk will introduce the motivation, workflow, preliminary progress, and current limitations of the project. We warmly invite researchers interested in domain theory and Lean to contribute to this collaborative effort.
Biography: Yuxu Chen received his Ph.D. in Mathematics from the School of Mathematics at Sichuan University, where he is currently a postdoctoral researcher. His research interests include domain theory and semantics, multimodal large language models, and AI for mathematics. His work has appeared in Theoretical Computer Science, Mathematical Structures in Computer Science, Pattern Recognition, and the proceedings of the 2025 Data Compression Conference (DCC2025).

VI. Traffic Information

一、从双流机场出发 / From Shuangliu Airport

出租车（Taxi）

距离：约20公里

全程约30分钟，费用约50元

Distance: about 20 km

About 30 minutes, fare about RMB 50

地铁（推荐）/ Metro (Recommended)

路线：双流机场1/2号航站楼站乘10号线 → 太平园站换乘3号线 → 磨子桥站A1口出站

全程约35分钟

Route: Take Line 10 at Shuangliu Airport Terminal 1/2 Station → transfer to Line 3 at Taipingyuan Station → exit at Moziqiao Station (ExitA1) Total time: about 35 minutes

二、从成都东站出发 / From Chengdu East Railway Station

出租车（Taxi）

距离：约10公里

全程约30分钟，费用约30元

Distance: about 10 km

About 30 minutes, fare about RMB 30

地铁（推荐）/ Metro (Recommended)

路线：成都东客站乘2号线 → 春熙路站换乘3号线 → 磨子桥站A1口出站

全程约25分钟

Route: Take Line 2 at Chengdu East Railway Station → transfer to Line 3 at Chunxi Road Station → exit at Moziqiao Station (Exit A1) Total time: about 25 minutes

三、从天府机场出发 / From Tianfu Airport

出租车（Taxi）

距离：约60公里

全程约1小时，费用约200元

Distance: about 60 km

About 1 hour, fare about RMB 200

地铁/ Metro

路线：天府机场1号2号航站楼站乘18号线 → 火车南站换乘1号线 → 省体育馆站换乘3号线 → 磨子桥站A1口出站

全程约1小时10分钟

Route: Take Line 18 at Tianfu Airport Terminal 1/2 Station → transfer to Line 1 at South Railway Station → transfer to Line 3 at Sichuan Gymnasium Station → exit at Moziqiao Station (Exit A1)

Total time: about 1 hour 10 minutes



VII. About Sichuan University

Sichuan University is located in Chengdu. Chengdu is the capital of Sichuan Province and a renowned historical and cultural city of Sichuan Province, known as the land of abundance. It consists of three campuses:Wangjiang, Huaxi and Jiang'an, covering an area of 470 hectares and boasting 2.817 million square meters of floor space. The university campuses, with their favorable environment and beautiful landscape, make a wonderful place for learning and research. Sichuan University is an institution that comprises three former national universities: the former Sichuan University, the former Chengdu University of Science and Technology, and the former West China University of Medical Sciences. The history of Sichuan University dates back to the Sichuan Chinese and Western School founded by Chuanlin Lu, Governor of Sichuan in 1896 on the orders of Emperor Guangxu. It is the earliest modern institution of higher education in Southwest China. The former Chengdu University of Science and Technology was one of the earliest multi-disciplinary engineering universities established through a restructuring program of colleges and universities. The former West China University of Medical Sciences, originally the West China Union University, was established by western Christian missionaries in Chengdu in 1910. It was not only one of the first universities in the western tradition, but also one of the pioneering universities to offer postgraduate programs in China.



VIII. About the School of Mathematics

The School of Mathematics is one of the oldest colleges and departments in Sichuan University. In 1896, Chuanlin Lu, the Governor-General of Sichuan, established the Sichuan Chinese-western School by imperial order and made certain that "The key point of western knowledge is arithmetic", a school of arithmetic was hence established and became the source of the School of Mathematics. The school of arithmetic enrolled a total of 30 students who major in arithmetic for the first year. Later, the school underwent several changes and mergers and was transformed into a national university in 1931: Sichuan University. During that period, the university began to set up departments in 1924; the name "Department of Mathematics" was used therefrom. The Director of the Department of Mathematics was Zhao Ke in 1938 and was replaced by Daren Wu in 1942. In the context of national regulation of colleges and departments in 1952, teachers from departments of mathematics of Chongqing University and West China University were incorporated into the Department of Mathematics in Sichuan University, the line up of teachers was thus enhanced.Famous professors taught in the Department from 1938 to 1952, such as Zhao Ke, Guoping Li,Daren Wu, Baoming Pu, Dingming Zhang, Kunsheng Hu and Shizhen Wei, et al. In 1978, Institute of Mathematics, Sichuan University was established, which received official approval from the MOE in 1983; its successive Directors were: Zhao Ke (1978-1984), Wenduan Lu (1984-1992) and Yingming Liu (1994-2016). From 1994 to 2000, Chengdu University of Science and Technology、 West China University of Medical Sciences. merged with Sichuan University in succession, and the teachers of mathematical foundations from the two universities were thus incorporated in the Department of Mathematics of Sichuan University. During the period, the Department of Mathematics SCU was renamed as the School of Mathematics SCU in 1998.

The School of Mathematics boasts complete academic disciplines and a strong faculty. The School now has in total 170 teachers, where there are 143 full-time teachers, including 2 foreign teachers. There are 47 professors, 3 specially-appointed researchers, 39 associate professors and 6 specially-appointed associate research fellows, 35 doctoral student advisers and 54 academic advisers to MA candidates, one member of the Chinese Academy of Sciences.

In the recent years, the School of Mathematics SCU have been enrolled on a yearly basis around 180 undergraduates and over 100 postgraduates, including 30 doctoral students or more.The National Mathematics Talent Training Base has been assessed as the National Top Base for two times. The mathematics and applied mathematics are national special disciplines. And the information and computing science discipline as well as the statistics discipline are the bases for cultivating talents in Sichuan. Our School has received numerous awards for education achievements at provincial and national levels. In the students fostered by our College, 2 have become the members of the Chinese Academy of Sciences; 3 were invited to give invitation speeches on the International Congress of Mathematicians; several have served as professors or researchers in famous universities or academic institutions at home and abroad; and some are picked for domestic important talent programs such as the "Recruitment Program of Global Experts", the Changjiang Scholars program of the Ministry of Education and the National Science Fund for Distinguished Young Scholars.



