

25th International Conference on Types for Proofs and Programs

TYPES 2019

June 11–14, 2019, Oslo, Norway

PROGRAM

Tuesday 11 June

08:00	Registration and coffee
08:55	Conference opening by Marc Bezem
09:00	Invited Talk Assia Mahboubi: <i>Classical analysis in dependent type theory</i>
10:00	Luis Scoccola: <i>Congruence in Univalent Type Theory</i>
10:15	Jonathan Cubides and Håkon Robbestad Gylterud: <i>Planar graphs in Homotopy Type Theory</i>
10:30	Break
	Session: HoTT 1
11:00	Henning Basold, Niels van der Weide and Niccolò Veltri: <i>Free Algebraic Theories as Higher Inductive Types</i>
11:15	Jonathan Sterling, C. Angiuli and D. Gratzer: <i>Cubical Syntax for Extensional Equality (without equality reflection)</i>
11:30	Benedikt Ahrens, Daniil Frumin, Marco Maggesi and Niels van der Weide: <i>Bicategories in Univalent Foundations</i>
11:45	Simon Boulrier and Théo Winterhalter: <i>Weak Type Theory is Rather Strong</i>
12:00	Gun Pinyo and Nicolai Kraus: <i>Twisted Cubes via Graph Morphisms</i>
12:15	Stefano Piceghello: <i>Coherence for symmetric monoidal groupoids in HoTT/UF</i>
12:30	Lunch
	Session: HoTT 2
14:00	Evan Cavallo and Robert Harper: <i>Internally Parametric Cubical Type Theory</i>
14:15	Tom de Jong: <i>The Scott Model of PCF in Univalent Type Theory</i>
14:30	Taichi Uemura: <i>A General Framework for Semantics of Type Theory</i>
14:45	François Thiré and Gaspard Ferey: <i>Proof Irrelevance in LambdaPi Modulo Theory</i>
15:00	Andreas Lyngø and Bas Spitters: <i>Universal Algebra in HoTT</i>
15:15	Andrei Rodin: <i>Knowledge Representation with HoTT</i>
15:30	Break
	Session: COST WG meetings
16:00	Herman Geuvers, MC Chair
16:15	Meetings WG 1,2,3,4

Wednesday 12 June, joint with HoTT-UF

08:00	Registration and coffee
08:55	Workshop opening by Bjørn Ian Dundas
	Session: Invited Talks HoTT-UF and Types
09:00	HoTT-UF Invited Talk Christian Sattler: <i>Homotopy Canonicity</i>
10:00	Break
10:30	Types Invited Talk Conor McBride: <i>Check the Box!</i>
11:30	HoTT-UF Invited Talk Simon Huber: <i>Homotopy Canonicity for Cubical Type Theory</i>
12:30	Lunch
	Session: Types Contributed Talks on HoTT
14:00	Fabian Ruch and Thierry Coquand: <i>Sheaf Models of Univalent Type Theory</i>
14:15	Martin Escardo: <i>Compact, totally separated and well-ordered types in univalent mathematics</i>
14:30	Anders Mörtberg, Andrea Vezzosi and Andreas Abel: <i>Cubical Agda : A Dependently Typed PL with Univalence and HIT's</i>
14:45	Edward Morehouse, G. A. Kavvos and Daniel Licata: <i>A Double-Categorical Perspective on Type Universes</i>
15:00	Ulrik Buchholtz and Jonathan Weinberger: <i>Type-theoretic modalities for synthetic $(\infty,1)$-categories</i>
15:15	Pierre Cagne: <i>Quillen bifibrations and the Reedy construction</i>
15:30	Break
	Session: Invited Talk HoTT-UF
16:00	HoTT-UF Invited Talk Evan Cavallo: <i>Cubical Indexed Inductive Types</i>
	Session: Boat trip + Dinner
17:00	Departure from Ingeniørenes Hus to boat from Aker Brygge (Pier 3)
17:25	Departure of boat (every 20 minutes) from Aker Brygge (Pier 3), to Bygdøy (2nd stop, named Fram Museum)
18:30	Dinner (+ COST CG meeting) at <i>Lille Herbern</i> (from Fram, walk Bygdøynesveien 400m, turn left Herberneveien 100m, ferry/swim 50m)
24:00	Last <i>bus 30</i> back to city center (every 20 minutes, stop Bygdøynesveien 200m), or a pleasant walk back to city center (5km)

Thursday 13 June

	Types	HoTT-UF
09:00	Invited Talk Stephanie Weirich: A Dependently-Typed Core Calculus for GHC	Wong (1 hour)
10:00	Pierre-Marie Pédro and Nicolas Tabareau: Effects, Substitution and Induction: An Explosive Ménage à Trois	
10:15	Malin Altenmüller and Conor McBride: Containers of Applications and Applications of Containers	
10:30	Break	
	Session: Types for proofs, proof assistants	
11:00	Cyril Cohen, Assia Mahboubi and Xavier Montillet: Frame type theory	Uemura (1 hour)
11:15	Luís Cruz-Filipe, Fabrizio Montesi and Marco Peressotti: Choreographies in Coq	
11:30	Gilles Dowek and Francois Thiré: Logipedia: a multi-system encyclopedia of formal proofs	
11:45	Danil Annenkov and Bas Spitters: Deep and Shallow Embeddings in Coq	
12:00	Andreas Nuyts and Dominique Devriese: Menkar: Towards a Multimode Presheaf Proof Assistant	
12:15	Marie Kerjean and Assia Mahboubi: A formalisation of Hahn-Banach theorem in Coq	
12:30	Lunch	
	Session: Types for programming, metatheory	
14:00	Pedro Rocha and Luís Caires: Towards Curry-Howard for Shared Mutable State	Swan (1 hour)
14:15	P. Bahr, C. U. Graulund and R. E. Møgelberg: Simply RaTT: A Fitch-style Modal Calculus for Reactive Programming	
14:30	Kenji Maillard, Danel Ahman, R. Atkey, G. Martinez, C. Hritcu, E. Rivas and E. Tanter: Dijkstra monads for all	
14:45	Jose Espirito Santo, Ralph Matthes and Luís Pinto: Deciding several concepts of finiteness for simple types	
15:00	Andreas Abel and Christian Sattler: Normalization by Evaluation for Call-by-Push-Value	
15:15	Stefan Monnier and Nathaniel Bos: How Erasure is Linked to (im)Predicativity	
15:30	Break	
	Session: Types business meeting	
16:00	Types business meeting	Capriotti (1 hr)

Friday 14 June

	Types	HoTT-UF
	Session: Types for security	
09:00	Invited Talk Adam Chlipala: Challenges Scaling Type-Theory-Based Verification to Cryptographic Code in Production	North (1 hour)
10:00	Abhishek Dang and Piyush Kurur: Verse - An EDSL in Coq for verified low-level cryptographic primitives	
10:00	Anton Setzer: A Model of the Blockchain using Induction-Recursion	
10:30	Break	
	Session: Inductive types, categorical models	
11:00	T. Altenkirch, A. Kaposi, A. Kovács and J. von Raumer: Constructing Inductive-Inductive Types via Type Erasure	Buchholtz (1 hr)
11:15	A. Kaposi, A. Kovács and A. Lafont: Closed Inductive-Inductive Types are Reducible to Indexed Inductive Types	
11:30	S. Castellan, P. Clairambault and P. Dybjer: Categories with Families: Untyped, Simply Typed, Dependently Typed	
11:45	Martin Ernst Bidlingmaier: Coherence via big categories with families of locally cartesian closed categories	
12:00	Andreas Nuyts and Dominique Devriese: Dependable Atomicity in Type Theory	
12:15	Niccolò Veltri and Niels van der Weide: Guarded Recursion in Agda via Sized Types	
12:30	Lunch	
	Session: Rewriting, Complexity, Resources and Events	
14:00	G. Genestier, F. Blanqui and O. Hermant: Dependency Pairs Termination in Dependent Type Theory Modulo Rewriting	Finster (1 hour)
14:15	Jesper Cockx, Nicolas Tabareau and Théo Winterhalter: How to Tame your Rewrite Rules	
14:30	Delia Kesner and Pierre Vial: Extracting Exact Bounds from Typing in a Classical Framework	
14:45	Mateus De Oliveira Oliveira: Type Inhabitation in Simply Typed Lambda Calculus Parameterized by Width	
15:00	Robert Atkey and James Wood: Linear metatheory via linear algebra	
15:15	Zhaohui Luo and Sergei Soloviev: Dependent Event Types in Event Semantics	
15:30	Break	
	Session: Types and Games	
16:00	Venanzio Capretta and Colm Baston: Game Forms for Coalition Effectivity Functions	
16:15	Fredrik Nordvall Forsberg: Compositional Game Theory using Dependent Types	
	Excursion to Holmenkollen (free)	
16:30	Bus to Holmenkollen leaves from Ingeniørenes Hus	