

## Monday

9:00 – 10:00
Short Intro Session
M. Moscato, C. Munoz, A. Smith
Affine Arithmetic and Applications to Real-Number Proving
20 mins coffee break
10:20 – 11:10
J. Hölzl, A. Lochbihler, D. Traytel
A Formalized Hierarchy of Probabilistic System Types (Proof Pearl)
F. Immler
A Verified Enclosure for the Lorenz Attractor (Rough Diamond)
20 mins coffee break
11:30 – 12:30
A. Anand, R. Knepper
ROSq: Robots Powered by Constructive Reals
H. Chan, M. Norrish
Mechanisation of AKS Algorithm: Part 1 – the Main Theorem
2hs lunch break
14:30 – 15:30
S. Schneider, G. Smolka, S. Hack
A First-Order Functional Intermediate Language for Verified Compilers
A. Fox
Improved Tool Support for Machine-Code Decompileation in HOL4
30 mins coffee break
16:00 – 17:00
F. Besson, S. Blazy, P. Wilke
A Concrete Memory Model for CompCert
T. Tuerk, M. Myreen, R. Kumar
Pattern Matches in HOL: A New Representation and Improved Code Generation

## Tuesday

9:00 – 10:00 (chair: M. Norrish)
A. Charguéraud, F. Pottier
Machine-Checked Verification of the Correctness and Amortized Complexity of an Efficient Union-Find Implementation
T. Nipkow
Amortized Complexity Verified
20 mins coffee break
10:20 – 11:10
S. Blazy, D. Demange, D. Pichardie
Validating Dominator Trees for a Fast, Verified Dominance Test
A. Lochbihler, A. Maximova
Stream Fusion for Isabelle's Code Generator (Rough Diamond)
20 mins coffee break
11:30 – 12:30 (chair: X. Zhang)
L. Birkedal
<b>Invited Talk</b>
2hs lunch break
14:30 – 15:30
M. Abdulaziz, M. Norrish, C. Gretton
Verified Over-Approximation of the Diameters of Propositionally Factored Transition Systems
T. Prathamesh
Formalizing Knot Theory in Isabelle/HOL
30 mins coffee break
16:00 – 17:00
S. Schäfer, T. Tebbi, G. Smolka
Autosubst: Reasoning with de Bruijn Terms and Parallel Substitutions
P. Maksimovic, A. Schmitt
HOCore in Coq
short coffee break
17:15 – 18:00
<b>ITP Business Meeting</b>

### Wednesday

9:00 – 10:00
R. Spadotti A Mechanized Theory of Regular Trees in Dependent Type Theory
G. Smolka, S. Schäfer, C. Doczkal Transfinite Constructions in Classical Type Theory
30 mins coffee break
10:30 – 11:30
M. Norrish <b>Invited Talk</b>
1h Lunch break
12:30 – 21:30
Excursion to Ge Yuan Garden and Slender West Lake Bus departs at 12:30 sharp from the hotel Dinner will be at the Lion Pavilion restaurant which is close to the Slender West Lake We expect to be back at the hotel around 22:30

### Thursday

9:00 – 10:00
B. Fallenstein, R. Kumar Proof-Producing Reflection for HOL, with an Application to Model Polymorphism
O. Kunčar, A. Popescu A Consistent Foundation for Isabelle/HOL
20 mins coffee break
10:20 – 11:10
Z. Paraskevopoulou <i>et al</i> Foundational Property-Based Testing
C. Kaliszyk, J. Urban, J. Vyskocil Learning To Parse on Aligned Corpora (Rough Diamond)
20 mins coffee break
11:30 – 12:30
F. Sieczkowski, A. Bizjak, L. Birkedal ModuRes: A Coq Library for Modular Reasoning about Concurrent Higher-Order Imperative Programming Languages
S. Boulmé, A. Maréchal Refinement to Certify Abstract Interpretations, Illustrated on Linearization for Polyhedra
2hs lunch break
14:30 – 15:30
C. Sternagel, R. Thiemann Deriving Comparators and Show-Functions in Isabelle/HOL
R. Affeldt, J. Garrigue Formalization of Error-correcting Codes: from Hamming to Modern Coding Theory
30 mins coffee break
16:00 – 17:00
P. Lammich Refinement to Imperative/HOL
B. Barras, C. Tankink, E. Tassi Asynchronous Processing of Coq Documents: from the Kernel up to the User Interface
short coffee break
17:15 – 17:45
L. Cruz-Filipe, P. Schneider-Kamp Formalizing Size-Optimal Sorting Networks: Extracting a Certified Proof Checker