APLAS aims at stimulating programming language research by providing a forum for the presentation of latest results and the exchange of ideas in topics concerned with programming languages and systems. APLAS is based in Asia, but is an international forum that serves the worldwide programming language community.

APLAS is sponsored by the Asian Association for Foundation of Software (AAFS) founded by Asian researchers in cooperation with many researchers from Europe and the USA, and National Natural Science Foundation of China (NSFC). Proceedings of the past symposiums were published in Springer-Verlag’s LNCS 2895, 3302, 3780, 4807, 5356, and 5904.

The symposium is devoted to all topics ranging from foundational to practical issues in programming languages and systems. Presented papers are expected in the following areas:

- semantics, logics, foundational theory;
- design of languages and foundational calculi;
- type systems;
- compilers, interpreters, abstract machines;
- program derivation, analysis, transformation;
- software security, safety, verification;
- concurrency, constraints, domain-specific languages;
- tools for programming, verification, implementation.

For more details please visit http://basics.sjtu.edu.cn/conference/aplas2010/
### Programme

#### 28 November (Sunday)
- 14:30-16:00 Tutorial I: Probabilistic testing semantics  
  Yuxin Deng
- 16:00-16:30 Coffee break
- 16:30-18:00 Tutorial II: A Logical Mix of Approximation and Separation  
  Aquinas Hobor, Robert Dockins
- 18:30-20:30 Reception (Xi’s Garden)

#### 29 November (Monday)
- 09:00-09:15 Opening
- 09:15-10:30 Keynote Address: A Calculus for Hybrid CSP  
  ZHOU Chaochen
- 10:15-10:45 Coffee break (Group Photos)
- 10:45-12:15 Typechecking Higher-Order Security Libraries  
  Kartikshayan Bhargavan, Cedric Fournet, Nataliya Gats  
  Deriving Type Systems and Implementations for Coroutines  
  Konrad Anton, Peter Thiemann  
  Liberal Typing for Functional Logic Programs  
  Francisco J. Lo pez-Fraguas, Enrique Martin-Martín,  
  Juan Rodriguez-Hortalá
- 12:15-13:45 Lunch break
- 13:45-15:15 A Provably Correct Stackless Intermediate  
  Representation for Java Bytecode  
  Delphine Demange, Thomas Jensen, David Pichardie  
  JNI Light: An Operational Model for the Core  
  JNI Gang Tan  
  An interactive tool for analyzing embedded SQL queries  
  [system and tool presentation] Aivar Annamaa, Andrey Breslav, Jerjeni Kabanov,  
  Varmo Vene
- 15:15-15:45 Coffee break
- 15:45-16:45 Invited talk: Foundations of Quantum Programming  
  Mingsheng Ying
- 16:45-17:00 Short break
- 17:00-18:00 Simple and Precise Widening for H-Polyhedra  
  Axel Simon, Lipian Chen  
  Metric Spaces and Termination Analyses  
  Aziem Chawdhary, Hongseok Yang
- 18:30-20:30 Dinner (Jiangong Jinxing Hotel)

#### 30 November (Tuesday)
- 09:00-10:00 Invited Talk: From a Verified Kernel Towards Verified Systems  
  Gerwin Klein
- 10:00-10:30 Coffee break
- 10:30-12:00 Amortized Resource Analysis with Polymorphic Recursion and Partial Big-Step Operational Semantics  
  Jan Hoffmann and Martin Hofmann  
  Interprocedural Control Flow Reconstruction  
  Andrea Flexeder, Helmut Seidl, Michael Petter, Bogdan Mihaila  
  Data Structure Fusion  
  Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, Moody Sagiv
- 12:00-13:30 Lunch break
- 13:30-15:00 Categorical Descriptive Composition  
  Shin-ya Katsumata  
  Bisimulation proof methods in a path-based specification language for polynomial coalgebras  
  Xiaonong Zhou, Yongji Li, Wenhuan Li, Haiyan Qiao,  
  Zhongmei Shu  
  Context-Preserving XQuery Fusion  
  Hiroaki Kato, Soichiro Hidaka, Zhenjiang Hu, Keisuke Nakano, Yasunori Ishihara
- 15:00-15:30 Coffee break
- 15:30-16:15 Poster Session

#### 1 December (Wednesday)
- 09:00-10:00 Invited Talk: Reasoning about Computations Using Two-Levels of Logic  
  Dale Miller
- 10:00-10:30 Coffee break
- 10:30-12:00 A Quick Tour of the VeriFast Program Verifier  
  [system and tool presentation] Bart Jacobs, Jan Smans, Frank Piessens  
  Verification of Tree-Processing Programs via Higher-Order Model Checking  
  Hiroshi Unno, Naoshii Tabuchi, Naoki Kobayashi  
  Automatically Inferring Quantified Loop Invariants by Algorithmic Learning from Simple Templates  
  Sooono Kong, Yungbum Jung, Cristina David, Bow-yaw Wang, Kwangkeun Yi
- 12:00-13:30 Lunch break
- 13:30-15:00 Relational Parametricity for a Polymorphic Linear Lambda Calculus  
  Jianzhou Zhao, Qi Zhang, Steve Zdancewic  
  A Certified Implementation of ML with Structural Polymorphism  
  Jacques Garrigue  
  Type Inference for Sublinear Space Functional Programming  
  Ugo Dal Lago, Ulrich Schoepp
- 15:00-15:30 Coffee break
- 15:30-17:00 Liveness of Communicating Transactions  
  Edske de Vries, Vasileios Koutavas, Matthew Hennessy  
  Model Independent Order Relations for Processes  
  Chaudong He  
  Concurrency Can’t Be Observed, Asynchronously  
  Paolo Baldan, Filippo Bonchi, Fabio Gadducci, Giacoma Monreale