CALL FOR PAPERS

Fifth International Conference on

Formal Structures for Computation and Deduction (FSCD 2020)

June 29 – July 5, 2020, Paris, France

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FSCD (`http://fscdconference.org/`) covers all aspects of formal structures for computation and deduction from theoretical foundations to applications. Building on two communities, RTA (Rewriting Techniques and Applications) and TLCA (Typed Lambda Calculi and Applications), FSCD embraces their core topics and broadens their scope to closely related areas in logics, models of computation, semantics and verification in new challenging areas.

The suggested, but not exclusive, list of topics for submission is:

1. <u>Calculi:</u> Rewriting systems (string, term, higher-order, graph, conditional, modulo, infinitary, etc.); Lambda calculus; Logics (first-order, higher-order, equational, modal, linear, classical, constructive, etc.); Proof theory (natural deduction, sequent calculus, proof nets, etc.); Type theory and logical frameworks; Homotopy type theory; Quantum calculi.

2. <u>Methods in Computation and Deduction:</u> Type systems (polymorphism, dependent, recursive, intersection, session, etc.); Induction, coinduction; Matching, unification, completion, orderings; Strategies (normalization, completeness, etc.); Tree automata; Model building and model checking; Proof search and theorem proving; Constraint solving and decision procedures.

3. <u>Semantics:</u> Operational semantics and abstract machines; Game Semantics and applications; Domain theory and categorical models; Quantitative models (timing, probabilities, etc.); Quantum computation and emerging models in computation.

4. <u>Algorithmic Analysis and Transformations of Formal Systems:</u> Type Inference and type checking; Abstract Interpretation; Complexity analysis and implicit computational complexity; Checking termination, confluence, derivational complexity and related properties; Symbolic computation.

5. <u>Tools and Applications:</u> Programming and proof environments; Verification tools; Proof assistants and interactive theorem provers; Applications in industry; Applications of formal systems in other sciences.

6. <u>Semantics and Verification in new challenging areas:</u> Certification; Security; Blockchain protocols; Data Bases; Deep learning and machine learning algorithms; Planning.

PUBLICATION The proceedings will be published as an electronic volume in the Leibniz International Proceedings in Informatics (LIPIcs) of Schloss Dagstuhl. All LIPIcs proceedings are open access.

SPECIAL ISSUE Authors of selected papers will be invited to submit an extended version to a special issue of Logical Methods in Computer Science.

SUBMISSION GUIDELINES Submissions can be made in two categories. Regular research papers are limited to 15 pages, excluding references. They must present original research which is unpublished and not submitted elsewhere. Proofs and other technical details that do not fit within the page limit can be submitted as an appendix (up to 5 pages). The appendix will be consulted at the discretion of the reviewers. Therefore, submissions must be self-contained within the respective page limit; the additional material should not be necessary to assess the merits of a submission. System descriptions are limited to 15 pages, excluding references. They must present new software tools, or significantly new versions of such tools, in which FSCD topics play an important role. An archive of the code with instructions on how to install and run the tool must be submitted. In addition, a webpage where the system can be experimented with should be provided. Complete instructions on submitting a paper can be found on the conference web site. **One author of an accepted paper is expected to present it at the conference.**

IMPORTANT DATES All deadlines are midnight anywhere-on-earth (AoE); late submissions will not be considered.

Abstract:	February ~~6~~ 10, 2020	Rebuttal:	March ~~27-29~~ 28-30, 2020	Final version:	April 27, 2020
Submission:	February ~~9~~ 13, 2020	Notification:		April 13, 2020	

BEST PAPER AWARD BY JUNIOR RESEARCHERS The program committee will select a paper in which at least one author is a junior researcher, i.e. either a student or whose PhD award date is less than three years from the first day of the meeting. Other authors should declare to the PC Chair that at least 50% of contribution is made by the junior researcher(s).