ALG-ROUGH'2018: Algebraic Methods in General Rough Sets : Trends in Mathematics Series

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April 30, 2018

Conference website	http://www.roughsets.org
Submission link	https://easychair.org/conferences/?conf=algrough2018
Abstract registration deadline	September 30, 2017
Abstract Submission deadline	September 30, 2017
Full Chapter Submission Deadline	December 30, 2017
Submission deadline	December 30, 2017

TOPICS
algebraic approaches to rough sets logics of approximate reasoning formal approaches to vagueness constructive algebras of rough sets

CFP for New Multi-Author Volume on "Algebraic Methods in General Rough Sets" in the 'Trends in Mathematics' series of Springer International in 2018.

Widespread use of algebraic methods in rough sets goes back to the very origins of the latter field. The focus of these methods was algebraic semantics,
associated logics and computation. At the turn of the century as many as a dozen classes of algebraic systems could be associated with semantics alone.
In recent times, many new approaches to general and hybrid rough sets such as the axiomatic approaches to granularity, abstract rough sets, use of hypergraphs,
newer dualities, inverse problems, matroids, ideal based rough sets and approaches based on antichains were developed. These have connections with algebras and
logics of knowledge, Formal Concept Analysis, quantum logic, formal topology, mereology, spatial mereology and approximate reasoning. The literature on all these
is spread out and a comprehensive account is missing.

It is known that many of the algorithms used in rough sets are essentially algebraic in nature. Related expositions are not particularly in line with the literature
on constructive algebras. Submissions that add to this aspect will also be welcomed.

The goal of the project is to bridge gaps, provide a detailed resource on the topics mentioned, provide stronger research directions and connect algebraic approaches
to rough sets with those for other forms of approximate reasoning. The book would be useful for researchers and teachers in rough sets, algebra, lattice theory,
non classical logic, fuzzy sets, Possibility theory, FCA, computational learning theory and other formal approaches to vagueness and approximate reasoning.

Prospective authors must submit 2 -3 page abstracts as soon as possible to speed up decision making on the proposal(s). Full manuscripts will be refereed by
three referees. Improved versions will be refereed again if deemed necessary.

SUBMISSION GUIDELINES
All Submissions must be original and not simultaneously submitted to another journal or conference. Authors should try and target a larger audience outside their
sub-specialization. Submissions in the following categories are particularly welcome:
- Detailed Research Expositions
- Research Surveys
- Research Expositions including New Results (previously unpublished)

Initially long abstracts (2-3 pages in length) of proposed chapter should be submitted through the easy chair system for approval by the editorial team.

LIST OF TOPICS
Topics of interest include (but are not necessarily limited to)

- Algebraic Semantics of General Rough Sets

- Algebraic Logics
- Distributive Modal Logics
- Lattices and Other Ordered Structures with Operators
- Antichains associated with Semantics
- Algebras associated with opposition
- Hypergraphs and Rough Sets
- Algebras of Granular Rough Sets
- Algebras of Dominance Based Rough Sets
- Connections with Formal Concept Analysis
- Ideal Based Rough Sets
- Algebraic Connections with Semantics of Fuzzy Logics.
- Algebraic Connections with Semantics of Type-1, 2 Fuzzy Sets.
- Connections with Effect Algebras
- Connections with Algebras of Quantum Logic
- Axiomatic Approaches to Granularity
- Axiomatic Approaches to Rough Sets
- Algebras of Hybrid Approaches
- Problems of Algebraizability
- Problems of Algebraic Logic
- Inverse and Duality Problems
- Connections with Paraconsistent Logics
- Algebras of Rough Computation
- Universal Algebraic Studies
- Algebraic Systems and Correspondences
- Dialectical Rough Sets
- Matroids and related Applications

EDITORS

- A Mani, University of Calcutta, Kolkata, India
- Gianpiero Cattaneo, University of Milano-Bicocca, Milano, Italy
- Ivo Düntsch, Brock University, Ontario, Canada

PUBLICATION

The multi-author volume "Algebraic Methods in General Rough Sets" will be published in the second quarter of 2018 in the 'Trends in Mathematics' series of Springer International Publishing .

CONTACT

All questions about submissions should be emailed to A Mani and optionally to Ivo Düntsch and Gianpiero Cattaneo