

## Main Topics

- Nonstandard inferences in description logics; an overview of the modern state, open problems, and perspectives for future research
- Logic of provability and a list of open problems in informal concepts of proof, intuitionistic arithmetic, bounded arithmetic, bimodal and polymodal logics, Magari algebras and Lindenbaum Heyting algebras, interpretability logic and its kin, graded provability algebras
- Logical dynamics: a survey of conceptual issues and open mathematical problems emanating from the recent development of various “dynamic-epistemic logics” for information update and belief revision. These systems put many-agent activities at the center stage of logic, such as speech acts, communication, and general interaction
- The continuing relevance of Turing’s approach to real-world computability and incomputability, and the mathematical modeling of emergent phenomena. Related open questions of a research interest in computability theory.
- Door to open: Mathematical logic and cognitive science
- Door to open: Semantics of medieval Arab linguists
- What logics do we need? What are logical systems and what should they be? What is a proof? What foundations do we need?
- Applied logic: characterization and relation with other trends in logic, computer science, and mathematics

Mathematical Problems from Applied Logic I

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