# ONTOLOGY-MEDIATED QUERIES WITH A COVERING AXIOM

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We will discuss the complexity of answering conjunctive databased queries mediated by a covering axiom. We consider this problem in the data complexity model, in which query is fixed and the input to the problem is the data in the database. For path-shaped Boolean conjunctive queries we show the following tetrachotomy result: the problem is either solvable in $AC^0$, or is NL-complete, or is P-complete, or is coNP-complete. We show that for a more general class of dag-shaped Boolean conjunctive queries even to decide whether the problem is solvable in $AC^0$ is a 2EXP-hard problem. The latter result implies that deciding boundedness of monadic single rule datalog programs is 2EXP-hard, which matches the upper bound known since 1988.

This is a joint work with Olga Gerasimova, Stanislav Kikot, Agi Kurucz and Michael Zakharyaschev.

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