Title: When is the evaluation of conjunctive queries tractable?

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Abstract: The evaluation of conjunctive queries is hard both with respect to its combined complexity (NP-complete) and its parameterized complexity (W[1]-complete). It becomes tractable (PTIME for combined complexity, FPT for parameterized complexity), when conjunctive queries have a bounded tree-width structure. In this paper we show that, in a sense, this is optimal both with respect to combined and parameterized complexity: Evaluating conjunctive queries is tractable precisely for those classes of queries that have a bounded tree-width structure.

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