Benedikt, Michael; **Libkin, Leonid**
Query safety with constraints. (English) Zbl 0989.68045
Kuper, Gabriel (ed.) et al., Constraint databases. Berlin: Springer. 109-129 (2000).

In chapter 5, the notion of safety well known from relational databases is studied in context of constraint databases. The traditional safety problem is explored here in some depth for constraint queries and for their active-semantics analogy, the classical relational calculus with interpreted predicates. The chapter is divided into four sections. After an introduction, the issue is studied in the finite state (section 5.2). The authors show that for arbitrary constraints, syntactic characterization of safety is impossible, and then explain how to obtain syntactic characterization for well-behaved classes of constraint, particularly, for FO + POLY. As an consequence, the safety is decidable for Boolean combinations of conjunctive queries. They also explanation how the growth bound results are derivable for safety characterization. Section 5.3 makes the transition to infinite constraint databases. It gives a general schema for transferring results about query safety to the general constraints setting. Then this schema is applied to give effective syntax for queries preserving geometric properties, e.g. the classes of convex polytopes, polyhedra, and compact semi-linear sets. The chapter finishes with bibliographical notes.

For the entire collection see [Zbl 0935.00022].

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