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2.2.8. ORD-Horn relations 2.3. Maximal tractable subclasses of Allen's algebra; 2.3.1. An alternative characterization of pre-convex relations; 2.3.2. The other maximal polynomial subclasses; 2.4. Using polynomial subclasses; 2.4.1. Ladkin and Reinefeld's algorithm; 2.4.2. Empirical study of the consistency problem; 2.5. Models of Allen's language; 2.5.1. Representations of Allen's algebra; 2.5.2. Representations of the time-point algebra; 2.5.3. 0-categoricity of Allen's algebra; 2.6. Historical note; Chapter 3. Generalized Intervals; 3.1. "When they built the bridge" 3.1.1. Towards generalized intervals 3.2. Entities and relations; 3.3. The lattice of basic (p, q)-relations; 3.4. Regions associated with basic (p, q)-relations; 3.4.1. Associated polytopes; 3.4.2. M-convexity of the basic relations; 3.5. Inversion and composition; 3.5.1. Inversion; 3.5.2. Composition; 3.5.3. The algebras of generalized intervals; 3.6. Subclasses of relations: convex and pre-convex relations; 3.6.1. (p, q)-relations; 3.6.2. Convex relations; 3.6.3. Pre-convex relations; 3.7. Constraint networks; 3.8. Tractability of strongly pre-convex relations; 3.8.1. ORD-Horn relations 3.9. Conclusions 3.10. Historical note; Chapter 4. Binary Qualitative Formalisms; 4.1. "Night driving"; 4.1.1. Parameters; 4.1.2. A panorama of the presented formalisms; 4.2. Directed points in dimension 1; 4.2.1. Operations; 4.2.2. Constraint networks; 4.2.3. Networks reducible to point networks; 4.2.4. Arbitrary directed point networks; 4.3. Directed intervals; 4.3.1. Operations; 4.3.2. Constraint networks and complexity; 4.4. The OPRA direction calculi; 4.5. Dipole calculi; 4.6. The Cardinal direction calculus; 4.6.1. Convex and pre-convex relations; 4.6.2. Complexity 4.7. The Rectangle calculus

Sommario/riassunto

Starting with an updated description of Allen's calculus, the book proceeds with a description of the main qualitative calculi which have been developed over the last two decades. It describes the connection of complexity issues to geometric properties. Models of the formalisms are described using the algebraic notion of weak representations of the associated algebras. The book also includes a presentation of fuzzy extensions of qualitative calculi, and a description of the study of complexity in terms of clones of operations.
