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Rules admissible in transitive temporal logic T_{S4} , sufficient condition. (English)

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Summary: The paper develops a technique for computing inference rules admissible in temporal logic T_{S4} . The problem whether there exists an algorithm recognizing inference rules admissible in T_{S4} is a long-standing open problem. The logic T_{S4} has neither the extension property nor the co-cover property which previously were central instruments for constructing decision algorithms for admissibility in modal logics (e.g., reflexive and transitive modal logic $S4$). Our paper uses a linear-compression property, a zigzag-ray property and a zigzag stretching property which hold for T_{S4} . The main result of the paper is a sufficient condition for admissibility of inference rules in T_{S4} . It is shown that all rules which are valid in special finite models (with an effective upper bound on size) must be admissible in T_{S4} .

MSC:

03B44 Temporal logic

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