**Chagrov, A. V.**
**Decidable modal logic with undecidable admissibility problem.** (English. Russian original)
Zbl 0782.03005

The admissibility problem for a given logic $L$ is to determine whether an arbitrary given inference rule $A_1(p_1, \ldots, p_n), \ldots, A_m(p_1, \ldots, p_n)/B(p_1, \ldots, p_n)$ is admissible in $L$, i.e., for all formulas $C_1, \ldots, C_n$, $B(C_1, \ldots, C_n) \in L$ whenever $A_1(C_1, \ldots, C_n) \in L, \ldots, A_m(C_1, \ldots, C_n) \in L$.

As is known, V. Rybakov proved the decidability of the admissibility problem for a number of intermediate and modal logics.

In this paper, the author constructs a decidable normal modal logic for which the admissibility problem is undecidable. The logic is an extension of K4 of width 3 and has infinitely many axioms.

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**MSC:**

03B45    Modal logic (including the logic of norms)
03B25    Decidability of theories and sets of sentences

Cited in **6** Documents

**Keywords:**

inference rule; admissible rule; decidability; normal modal logic

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**References:**

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