

-NoValue-

fil.1 S5 is Decidable

nml:fil:dec:
sec The finite model property gives us an easy way to show that systems of modal logic given by schemas are *decidable* (O.s., that there is a computable procedure to determine whether a fórmula is derivável in the system or not).

Teorema fil.1. *S5 is decidable.*

Prova. Let φ be given, and suppose the variáveis proposicionais occurring in φ are among $p_1, \dots, p_k$. Since for each n there are only finitely many models with n worlds assigning a value to $p_1, \dots, p_k$, we can enumerate, *in parallel*, all the theorems of **S5** by generating proofs in some systematic way; and all the models containing 1, 2, ... worlds and checking whether φ fails at a world in some such model. Eventually one of the two parallel processes will give an answer, as by ?? and ??, either φ is derivável or it fails in a finite universal model. $\square$

The above proof works for **S5** because filtrations of universal models are automatically universal. The same holds for reflexivity and seriality, but more work is needed for other properties.

Créditos das Imagens

Referências Bibliográficas