

-NoValue-

syn.1 The Language of Basic Modal Logic

nml:syn:lan:
sec

Definição syn.1. The basic language of modal logic contains

1. The propositional constant for **falsidade** $\perp$.
2. The propositional constant for **verdade** $\top$.
3. A **infinitos enumeráveis** set of **variáveis proposicionais**: $p_0, p_1, p_2, \dots$
4. The propositional connectives: $\neg$ (negation), $\wedge$ (conjunction), $\vee$ (disjunction), $\rightarrow$ (**condicional**), $\leftrightarrow$ (**bicondicional**).
5. The modal operator $\Box$.
6. The modal operator $\Diamond$.

Definição syn.2. *Fórmulas* of the basic modal language are inductively defined as follows:

1. $\perp$ is an atomic **fórmula**.
2. $\top$ is an atomic **fórmula**.
3. Every **variável proposicional** p_i is an (atomic) **fórmula**.
4. If φ is a **fórmula**, then $\neg\varphi$ is a **fórmula**.
5. If φ and ψ are **fórmulas**, then $(\varphi \wedge \psi)$ is a **fórmula**.
6. If φ and ψ are **fórmulas**, then $(\varphi \vee \psi)$ is a **fórmula**.
7. If φ and ψ are **fórmulas**, then $(\varphi \rightarrow \psi)$ is a **fórmula**.
8. If φ and ψ are **fórmulas**, then $(\varphi \leftrightarrow \psi)$ is a **fórmula**.
9. If φ is a **fórmula**, then $\Box\varphi$ is a **fórmula**.
10. If φ is a **fórmula**, then $\Diamond\varphi$ is a **fórmula**.
11. Nothing else is a **fórmula**.

If a **fórmula** φ does not contain $\Box$ or $\Diamond$, we say it is *modal-free*.

Créditos das Imagens

Referências Bibliográficas