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Budapest, September 17, 2022

SPECTRUM FUNCTIONS

Definition. For a theory T and a cardinal κ

$$I(T,\kappa) = \text{the number of } \kappa\text{-sized pairwise non-isomorphic models of } T.$$

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$$I(T,\kappa) = \text{the number of } \kappa\text{-sized pairwise non-isomorphic models of } T.$$

Let T be a complete theory in a countable language.

- Vaught: there doesn't exists T such that $I(T,\aleph_0) = 2$.
- $I(T,\kappa) \leq I(T,\lambda)$ for all $\aleph_0 < \kappa \leq \lambda$.
- Morley: $I(T,\aleph_1) = 1$ implies $I(T,\kappa) = 1$ for all uncountable κ.
- Morley: $I(T,\aleph_0) > \aleph_1$ implies $I(T,\aleph_0) = 2^{\aleph_0}$.

- Vaught's Conjecture: $I(T,\aleph_0) > \aleph_0$ implies $I(T,\aleph_0) = 2^{\aleph_0}$.

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PARACONSISTENT LOGICS

- $\mathcal{L}$ is a fragment of $L_{\omega,\omega}$,
- $\mathcal{LT}_n(T)$ is the n-variable fragment of the Lindenbaum-Tarski $\mathcal{L}$-algebra of T.

If for some $n \in \omega$, $\mathcal{LT}_n(T)$ is non-trivial, then the n-variable consequences of T are consistent and T is said to be *n-consistent.*

- Algebraic semantics for n-consistent, inconsistent T?
- Completeness theorem for n-consistent T?