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Computable functionals in Montague semantics.

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We consider algorithmic properties of mathematical models used in computational linguistics to formalize and represent the semantics of natural language sentences. In particular, finite-order functionals play a crucial role in Montague intensional logic and formal semantics for natural languages [2]. We compare several computable (in sense of [1]) models for the spaces of finite-order functionals based on Ershov-Scott theory of domains and approximation spaces. Namely, we describe how complexity and representability of functional spaces depend from the choice of three basic domains: for entities, for truth values, and for states. This work continues the research started in [3, 4, 5].

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