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Title: A quantificational logic for deducibility

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Abstract: The extended logics permit the mathematical analysis of different types of structures. In this talk, we discuss the Tarski spaces associated to deduction systems and introduce an extended logic associated to the Tarski spaces.

The logical quantifiers universal \forall and existential \exists are important and present at the Logic history since Antiquity. The traditional use of quantifiers shows beautiful and relevant relations between these quantifiers and others defined from them since ancient times.

These logical quantifiers are essentials in the development of Logic, however there are quantifiers that can not be defined in some natural way from these logical quantifiers. For example, quantifiers as many (few) and almost all (almost none). These new quantifiers are named non logical quantifiers.

Mostowski (1957) pointed the existence of many non logical quantifiers, or generalized quantifiers as named by Mostowski, mathematically interesting but non defined from the classical ones. We consider that this paper is this tradition.

On the other hand, in the context of linguist, the quantifiers appeared as fundamental concept to be formalized, as we can see in Barwise e Cooper (1981). This tradition named the new quantifiers as natural quantifiers, for they occur in natural languages.

Considering these investigations on non logical quantifiers, Grácio (1999) introduced a family of logics, the modulated logics, such that each member try to formalize aspects of some natural quantifier.

Motivated by these papers and the definition of Tarski consequence operator, we implement the concept of deduction in a first-order logic extended by a new quantifier that interprets the notion of deductibility.

We present the definition of Tarski space, modulated logics and so we introduce this extended logic of deductibility, for whose we give theorems of soundness and completeness, and try to evolve this logic in the environment of modulated logics.

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