Insalate di Matematica
presents

An introduction to Lawvere's doctrines

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Abstract

Doctrines were introduced by Lawvere in 1969 as mathematical structures capable of synthesizing the structural properties of a logical system, giving a possible way to study logic within category theory. A doctrine is a presheaf on a small category (with finite products) taking values in partially ordered sets. To any given first order theory one can associate a doctrine by attaching to each finite list of variables the poset of the formulae that can be written using those free variables, ordered by provable reciprocal consequence. During the talk we will discuss the definition of a doctrine, and we will explain how the main logic-theoretical notions can be translated into the doctrine-theoretical language.

Keywords:

Lawvere's doctrines · Categorical logic · Adjunctions

"Obvious" is the most dangerous word in mathematics. - Eric Temple Bell