Algebraic type theory[*]

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A type theoretic universe $E \to U$ bears a certain algebraic structure resulting from the type-forming operations of unit type, identity type, dependent sum, and dependent product (as in [1]) which may be generalized to form the concept of a "Martin-Löf algebra". A free ML-algebra is then a model of type theory, perhaps with special properties. The general theory of such ML-algebras is then something like a proof-relevant version of the theory of Zermelo-Fraenkel algebras from the algebraic set theory of Joyal & Moerdijk [2]

References

[1] S. Awodey. Natural models of homotopy type theory. *Math.Stru.Comp.Sci.*, 28(2), 2008.

[2] A. Joyal and I. Moerdijk, Algebraic Set Theory, Cambridge University Press, 1995.