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A categorical reduction system for linear logic. (English) Zbl 07281443

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Computational aspects of the lambda calculus suggests that the corresponding Cartesian closed category may well be given a dynamic computational mechanism. The idea in [*R. Seely*, “Modelling computations: a 2-categorical framework”, in: Proceedings of the symposium on logic in computer science, LICS’87. Los Alamitos: IEEE Computer Society. 65–71 (1987)] looks natural, but has not been pursued further.

This paper introduces a rewriting system on the categorical semantics of linear logic, namely, a free (intuitionistic or classical) linear category put down as a calculus. It is shown that this calculus abides by the weak termination property. The author intends in a forthcoming paper to show that it is pretty much confluent. These two results surely imply that each morphism has a unique normal form as far as no units are involved. A dividend is mechanization of diagram chasing.

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03B40 Combinatory logic and lambda calculus

68N18 Functional programming and lambda calculus

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