

Elementary Affine Logic and the Call by Value Lambda Calculus

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1 Abstract

Light and elementary linear logics have been introduced as logical systems enjoying quite remarkable normalization properties. Designing a type assignment system for pure lambda calculus from these logics, however, is problematic, as discussed in [1]. In this paper, we show that shifting from usual call-by-name to call-by-value lambda calculus allows to regain strong connections with the underlying logic. We will do this in the context of Elementary Affine Logic (EAL), designing a type system in natural deduction style assigning EAL formulae to lambda terms.

References

1. Baillot, P., Terui, K.: Light types for polynomial time computation in lambda-calculus. In: Proceedings of the 19th IEEE Symposium on Logic in Computer Science. (2004) 266–275