

Equational theories in an enriched context

Multi-sorted theories and inequalities

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Abstract

In [1] is shown how (under suitable hypothesis) finitary enriched monads on an enriched category \mathbf{C} can be presented as given by a choice of "operations" and "equations", generalising the classical works of Lawvere [2] and Linton [3]. Following [4], in this seminar we will see how this machinery allows us to recover multi-sorted equational theories and inequalities taking \mathbf{C} to be, respectively, the (ordinary) category \mathbf{Set}^k for a finite k and the category \mathbf{Poset} enriched over itself.

References

- [1] G. M. Kelly and A. J. Power. Adjunctions whose counits are coequalizers, and presentations of finitary enriched monads. *Journal of pure and applied algebra*, 89(1-2):163–179, 1993.
- [2] F. W. Lawvere. Functorial semantics of algebraic theories. *Proceedings of the National Academy of Sciences of the United States of America*, 50(5):869, 1963.
- [3] F. E. J. Linton. Some aspects of equational categories. In *Proceedings of the Conference on Categorical Algebra*, pages 84–94. Springer, 1966.
- [4] E. Robinson. Variations on algebra: monadicity and generalisations of equational theories. *Formal Aspects of Computing*, 13(3-5):308–326, 2002.