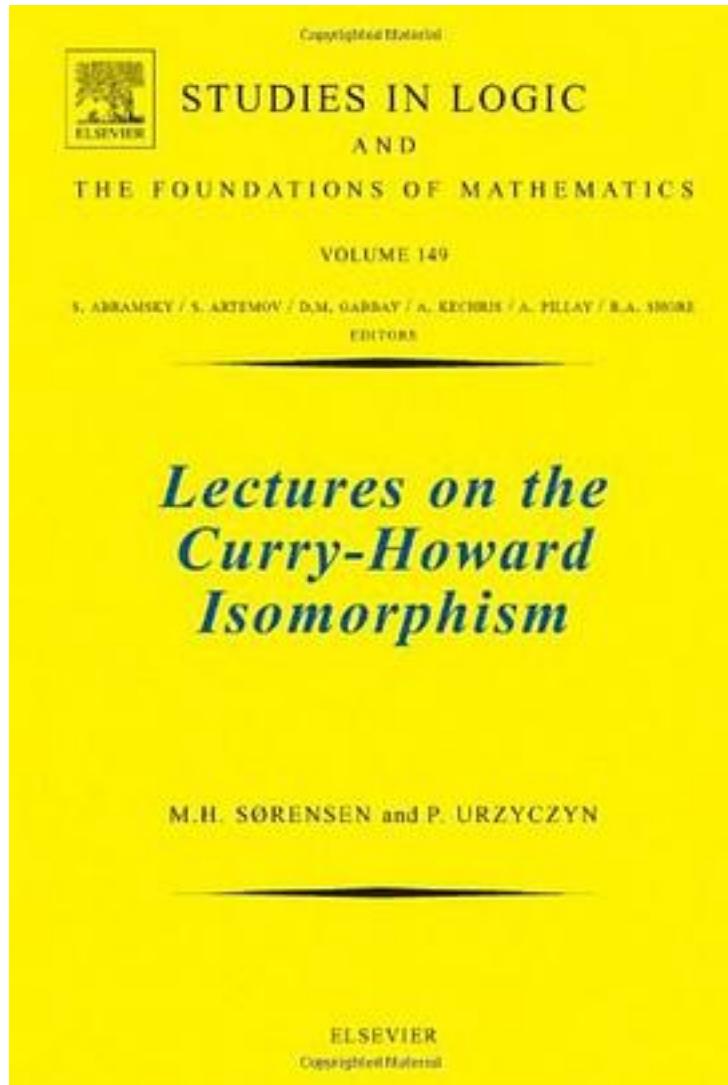


Lectures on the Curry-Howard Isomorphism, Volume 149



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The Curry-Howard isomorphism states an amazing correspondence between systems of formal logic as encountered in proof theory and computational calculi as found in type theory. For instance, minimal propositional logic corresponds to simply typed lambda-calculus, first-order logic corresponds to dependent types, second-order logic corresponds to polymorphic types, sequent calculus is related to explicit substitution, etc. The isomorphism has many aspects, even at the syntactic level: formulas correspond to types, proofs correspond to terms, provability corresponds to inhabitation, proof normalization corresponds to term reduction, etc. But there is more to the isomorphism than this. For instance, it is an old idea - due to Brouwer, Kolmogorov, and Heyting - that a constructive proof of an implication is a procedure that transforms proofs of the antecedent into proofs of the succedent; the Curry-Howard isomorphism gives syntactic representations of such procedures. The Curry-Howard isomorphism also provides theoretical foundations for many modern proof-assistant systems (e.g. Coq). This book give an introduction to parts of proof theory and related aspects of type theory relevant for the Curry-Howard isomorphism. It can serve as an introduction to any or both of typed lambda-calculus and intuitionistic logic. Its key features are: the Curry-Howard Isomorphism treated as common theme; reader-friendly introduction to two complementary subjects: Lambda-calculus and constructive logics; thorough study of the connection between calculi and logics; elaborate study of classical logics and control operators; account of dialogue games for classical and intuitionistic logic; and, theoretical foundations of computer-assisted reasoning.

作者介绍:

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评论

目前见到的关于ch同构的最全面的参考书。不过这种书从头到尾读完好像没有太大的意义，需要考证细节时看看就好。

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