Epistemology versus ontology [essays on the philosophy and foundations of mathematics in honour of Per Martin-Löf /

Dybjer, Peter

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Llibres electrònics

Monografía

This book brings together philosophers, mathematicians and logicians to penetrate important problems in the philosophy and foundations of mathematics. In philosophy, one has been concerned with the opposition between constructivism and classical mathematics and the different ontological and epistemological views that are reflected in this opposition. The dominant foundational framework for current mathematics is classical logic and set theory with the axiom of choice (ZFC). This framework is, however, laden with philosophical difficulties. One important alternative foundational programme that is actively pursued today is predicativistic constructivism based on Martin-Löf type theory. Associated philosophical foundations are meaning theories in the tradition of Wittgenstein, Dummett, Prawitz and Martin-Löf. What is the relation between proof-theoretical semantics in the tradition of Gentzen, Prawitz, and Martin-Löf and Wittgensteinian or other accounts of meaning-as-use? What can proof-theoretical analyses tell us about the scope and limits of constructive and predicative mathematics?

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