1. Record Nr. UNINA9910137163703321 Advances in Proof-Theoretic Semantics // edited by Thomas Piecha, Titolo Peter Schroeder-Heister Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2016 **ISBN** 3-319-22686-X Edizione [1st ed. 2016.] 1 online resource (vi. 283 pages) : digital file(s) Descrizione fisica Trends in Logic, Studia Logica Library, , 1572-6126; ; 43 Collana Disciplina 160 Soggetti Logic Mathematical logic Mathematical Logic and Foundations Mathematical Logic and Formal Languages Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Nota di contenuto Chapter 1. Introduction; Thomas Piecha & Peter-Schroeder-Heister --Chapter 2. On Brouwer-Heyting-Kolmogorov provability semantics; Sergei N. Artëmov -- Chapter 3. Two Ways of General Proof Theory; Kosta Došen -- Chapter 4. Generalised elimination rules; Roy Dyckhoff -- Chapter 5. On the proof theoretic foundations of set theory; Lars Hallnäs -- Chapter 6. The choice of semantics as a methodological question; Wilfrid Hodges -- Chapter 7. The mode of presentation; Reinhard Kahle -- Chapter 8. Remarks on relations between Gentzen and Heyting inspired PTS; Dag Prawitz -- Chapter 9. Unification of logics by reflection; Giovanni Sambin -- Chapter 10. BHK and Brouwer's Theory of the Creative Subject; Göran Sundholm -- Chapter 11. Compositional semantics for predicate logic: Eliminating bound variables from formulas and deductions; William W. Tait -- Chapter 12. Intuitionism, the Paradox of Knowability and Empirical Negation; Gabriele Usberti -- Chapter 13. Explicit composition and its application in normalization proofs; Jan von Plato -- Chapter 14. A two-sorted typed lambda-calculus; Heinrich Wansing -- Chapter 15. Kreisel's second clause and the Theory of Constructions; Walter Dean & Hidenori Kurokawa -- Chapter 16. On Paradoxes in Proof-Theoretic Semantics;

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## Sommario/riassunto

This volume is the first ever collection devoted to the field of prooftheoretic semantics. Contributions address topics including the systematics of introduction and elimination rules and proofs of normalization, the categorial characterization of deductions, the relation between Heyting's and Gentzen's approaches to meaning, knowability paradoxes, proof-theoretic foundations of set theory, Dummett's justification of logical laws, Kreisel's theory of constructions, paradoxical reasoning, and the defence of model theory. The field of proof-theoretic semantics has existed for almost 50 years, but the term itself was proposed by Schroeder-Heister in the 1980s. Proof-theoretic semantics explains the meaning of linguistic expressions in general and of logical constants in particular in terms of the notion of proof. This volume emerges from presentations at the Second International Conference on Proof-Theoretic Semantics in Tübingen in 2013, where contributing authors were asked to provide a self-contained description and analysis of a significant research question in this area. The contributions are representative of the field and should be of interest to logicians, philosophers, and mathematicians alike.