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Autore	Probst Dieter
Titolo	Concepts of proof in mathematics, philosophy, and computer science / / Dieter Probst and Peter Schuster
Pubbl/distr/stampa	Berlin, [Germany] ; : , : De Gruyter, , 2016 ©2016
ISBN	1-5015-0264-6 1-5015-0262-X
Descrizione fisica	1 online resource (384 pages)
Collana	Ontos Mathematical Logic, , 2198-2341 ; ; Volume 6
Disciplina	511.36
Soggetti	Proof theory Mathematics Logic, Symbolic and mathematical
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Herbrand Confluence for First-Order Proofs with 2-Cuts -- Proof-Oriented Categorical Semantics -- Logic for Gray-code Computation -- The Continuum Hypothesis Implies Excluded Middle -- Theories of Proof-Theoretic Strength ( +1 ) -- Some Remarks about Normal Rings -- On Sets of Premises -- Non-Deterministic Inductive Definitions and Fullness -- Cyclic Proofs for Linear Temporal Logic -- Craig Interpolation via Hypersequents -- A General View on Normal Form Theorems for ukasiewicz Logic with Product -- Relating Quotient Completions via Categorical Logic -- Some Historical, Philosophical and Methodological Remarks on Proof in Mathematics -- Cut Elimination in Sequent Calculi with Implicit Contraction, with a Conjecture on the Origin of Gentzen's Altitude Line Construction -- Hilbert's Programme and Ordinal Analysis -- Aristotle's Deductive Logic: a Proof-Theoretical Study -- Remarks on Barr's Theorem: Proofs in Geometric Theories
Sommario/riassunto	A proof is a successful demonstration that a conclusion necessarily follows by logical reasoning from axioms which are considered evident for the given context and agreed upon by the community. It is this concept that sets mathematics apart from other disciplines and

distinguishes it as the prototype of a deductive science. Proofs thus are utterly relevant for research, teaching and communication in mathematics and of particular interest for the philosophy of mathematics. In computer science, moreover, proofs have proved to be a rich source for already certified algorithms. This book provides the reader with a collection of articles covering relevant current research topics circled around the concept 'proof'. It tries to give due consideration to the depth and breadth of the subject by discussing its philosophical and methodological aspects, addressing foundational issues induced by Hilbert's Programme and the benefits of the arising formal notions of proof, without neglecting reasoning in natural language proofs and applications in computer science such as program extraction.

2. Record Nr.

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**Descrizione fisica**

1 online resource

**Disciplina**

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**Soggetti**

Universities and colleges - Administration

Education, Higher - Administration

Universites - Administration

Enseignement superieur - Administration

Education Policy

Higher Education

Administration scolaire

Enseignement superieur

Politique educative

Periodicals

Periodique electronique (Descripteur de forme)

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**Lingua di pubblicazione**

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**Materiale a stampa**

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