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Nota di contenuto	Contributions to Calculemus 2007 -- Executing in Common Lisp, Proving in ACL2 -- A Rational Reconstruction of a System for Experimental Mathematics -- Context Aware Calculation and Deduction -- Towards Constructive Homological Algebra in Type Theory -- What Might "Understand a Function" Mean? -- Biform Theories in Chiron -- Automatic Synthesis of Decision Procedures: A Case Study of Ground and Linear Arithmetic -- Certified Computer Algebra on Top of an Interactive Theorem Prover -- Quantifier Elimination for Approximate Factorization of Linear Partial Differential Operators -- Rule-Based Simplification in Vector-Product Spaces -- Contributions to MKM 2007 -- Mathematics and Scientific Markup -- The On-Line Encyclopedia of Integer Sequences -- First Steps on Using OpenMath to Add Proving Capabilities to Standard Dynamic Geometry Systems -- Higher order Proof Reconstruction from Paramodulation-Based Refutations: The Unit Equality Case -- A Framework for Interactive Proof -- Supporting User-Defined Notations When Integrating Scientific Text-Editors with Proof Assistance Systems -- Mizar Course in Logic and Set Theory -- Using Formal Concept Analysis in Mathematical Discovery -- Cooperative Repositories for Formal Proofs -- Revisions as an Essential Tool to Maintain Mathematical Repositories -- The Layers of Logiweb --

Formal Representation of Mathematics in a Dependently Typed Set Theory -- Restoring Natural Language as a Computerised Mathematics Input Method -- Narrative Structure of Mathematical Texts -- Reexamining the MKM Value Proposition: From Math Web Search to Math Web ReSearch -- Alternative Aggregates in Mizar -- An Approach to Mathematical Search Through Query Formulation and Data Normalization -- Extended Formula Normalization for ?-Retrieval and Sharing of Mathematical Knowledge -- Towards Mathematical Knowledge Management for Electrical Engineering -- Spurious Disambiguation Error Detection -- Methods of Relevance Ranking and Hit-content Generation in Math Search.

Sommario/riassunto

This volume contains the collected contributions of two conferences, Calculus2007 and MKM2007. Calculus2007 was the 14th in a series of conferences dedicated to the integration of computer algebra systems (CAS) and automated deduction systems (ADS). MKM 2007 was the sixth International Conference on Mathematical Knowledge Management, an emerging interdisciplinary field of research in the intersection of mathematics, computer science, library science, and scientific publishing. Both conferences aimed to provide mechanized mathematical assistants. Although the two conferences have separate communities and separate foci, there is a significant overlap in the interests in building mechanized mathematical assistants. For this reason it was decided to collocate the two events in 2007 for the first time, at RISC in Hagenberg, Austria. The number and quality of the submissions show that this was a good decision. While the proceedings are shared, the submission process was separate. The responsibility for acceptance/rejection rests completely with the two separate Program Committees. By this collocation we made a contribution against the fragmentation of communities which work on different aspects of different independent branches, traditional branches (e.g., computer algebra and theorem proving), as well as newly emerging ones (on user interfaces, knowledge management, theory exploration, etc.). This will also facilitate the development of integrated mechanized mathematical assistants that will be routinely used by mathematicians, computer scientists, and engineers in their every-day business.
