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Altri autori (Persone)	LiHongbo OlverPeter J SommerGerald <1945->
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Estimation Equation System -- Some Necessary Conditions on the Number of Solutions for the P4P Problem -- A Generalization of Xie-Nie Stability Criterion -- Formal Power Series and Loose Entry Formulas for the Dixon Matrix -- Constructive Theory and Algorithm for Blending Several Implicit Algebraic Surfaces -- Minimum-Cost Optimization in Multicommodity Logistic Chain Network -- A Survey of Moving Frames -- Invariant Geometric Motions of Space Curves -- Classification of Signature Curves Using Latent Semantic Analysis -- Hamiltonian System and Algebro-Geometric Solution Associated with Dispersive Long Wave Equation -- The Painlevé Test of Nonlinear Partial Differential Equations and Its Implementation Using Maple -- Geometric Algebra and Applications -- Hybrid Matrix Geometric Algebra -- Intrinsic Differential Geometry with Geometric Calculus -- On Miquel's Five-Circle Theorem -- On Averaging in Clifford Groups -- Combinatorics and Representation Theory of Lie Superalgebras over Letterplace Superalgebras -- Applications of Geometric Algebra in Robot Vision -- Twists – An Operational Representation of Shape -- Recent Applications of Conformal Geometric Algebra -- Applications of Conformal Geometric Algebra in Computer Vision and Graphics -- Conic Sections and Meet Intersections in Geometric Algebra -- nD Object Representation and Detection from Single 2D Line Drawing -- Polyhedral Scene Analysis Combining Parametric Propagation with Calotte Analysis -- A Unified and Complete Framework of Invariance for Six Points -- An Introduction to Logical Animation -- Recent Methods for Reconstructing Surfaces from Multiple Images.

Sommario/riassunto

Mathematics Mechanization consists of theory, software and application of computerized mathematical activities such as computing, reasoning and discovering. Its unique feature can be succinctly described as AAA (Algebraization, Algorithmization, Application). The name “Mathematics Mechanization” has its origin in the work of Hao Wang (1960s), one of the pioneers in using computers to do research in mathematics, particularly in automated theorem proving. Since the 1970s, this research direction has been actively pursued and extensively developed by Prof. Wen-tsün Wu and his followers. It differs from the closely related disciplines like Computer Mathematics, Symbolic Computation and Automated Reasoning in that its goal is to make algorithmic studies and applications of mathematics the major trend of mathematics development in the information age. The International Workshop on Mathematics Mechanization (IWMM) was initiated by Prof. Wu in 1992, and has ever since been held by the Key Laboratory of Mathematics Mechanization (KLMM) of the Chinese Academy of Sciences. There have been seven workshops of the series up to now. At each workshop, several experts are invited to deliver plenary lectures on cutting-edge methods and algorithms of the selected theme. The workshop is also a forum for people working on related subjects to meet, collaborate and exchange ideas.