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What is new in CoCoA? (English) [Zbl 1437.13002]


Summary: CoCoA is a well-established Computer Algebra System for Computations in Commutative Algebra, and specifically for Gröbner bases.

In the last few years CoCoA has undergone a profound change: the code has been totally re-written in C++, and includes an integral open source C++ library, called CoCoALib.

The new CoCoA-5 language still resembles the CoCoA-4 language, and maintains or improves the naturalness and ease of use for which CoCoA-4 was noted, but the clearly defined semantics of the new language make it both more robust and more flexible than CoCoA-4.

Also its C++ mathematical core, CoCoALib, focusses on ease of use and robustness, so that other software can use it as a library for multivariate polynomial computations and other Commutative Algebra operations.

Moreover the internal design makes it easy to render new extensions to the library accessible also via the interactive CoCoA-5 system.

For the entire collection see [Zbl 1293.65003].

MSC:

13-04 Software, source code, etc. for problems pertaining to commutative algebra
14-04 Software, source code, etc. for problems pertaining to algebraic geometry
13Pxx Computational aspects and applications of commutative rings
14Qxx Computational aspects in algebraic geometry
68W30 Symbolic computation and algebraic computation

Software:

GSL; Normaliz; CoCoA; Frobby; CoCoALib

Full Text: DOI