

# CoCoA-5

|  | 2018-11 |    |    |    | 2018-12 |    |    |    | 2019-1 |   |   |   |   | 2019-2 |   |   |   | 2019-3 |    |    |    | 2019-4 |    |    |    |  |  |
|--|---------|----|----|----|---------|----|----|----|--------|---|---|---|---|--------|---|---|---|--------|----|----|----|--------|----|----|----|--|--|
|  | 45      | 46 | 47 | 48 | 49      | 50 | 51 | 52 | 1      | 2 | 3 | 4 | 5 | 6      | 7 | 8 | 9 | 10     | 11 | 12 | 13 | 14     | 15 | 16 | 17 |  |  |
| <b>CoCoA</b>                                   |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| <b>CoCoA-5</b>                                 |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| intersection                                   |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Hermite normal form                            |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| RingID: remove this function?                  |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Profiling with clang                           |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| CanonicalHom                                   |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Manual of functions vs ManExamples             |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| CoCoA-5 releases on redmine                    |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| CoCoA-5 - CoCoA-5.4.2                          |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Automatic mapping between (some) (...)         |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| theValue makes copy                            |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Elim ordering and matrix ordering (...)        |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| C++11 compatibility questions                  |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| OpenOFile                                      |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Functions throwing error even though (...)     |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Janet Bases: port function into (...)          |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| CoCoA-5 Projects for students (e.g. (...)      |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Installation instructions (on website)         |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| port SmithNormalForm (CoCoA-4)package (...)    |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| EmacsUI Source/SourceRegion produce (...)      |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Emacs UI; remove cruft                         |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Eliminate package BinRepr                      |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Review utility of package IO                   |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| CoCoAManual: improve part on input/output      |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Gaussian Elimination                           |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Prototype package for Linear Commutative (...) |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |
| Variable It: assign before or after (...)      |         |    |    |    |         |    |    |    |        |   |   |   |   |        |   |   |   |        |    |    |    |        |    |    |    |  |  |

CoCoA

**Speed of some Normaliz calls (NmzComputation)**

**NotBuiltin.cpkg5: indent for MODULE**

**Referring to indets with multiple (...)**

**Emacs UI: send-file (C-c C-f) should (...)**

**Implicit: make easier to use with (...)**

**Add TUTORIALs to online manual**

**Clean up CoCoALibSupplement**

**Function "ideal" evaluates the (...)**

**"universal denominator" (related (...))**

**Microsoft (Windows 10, maybe other (...))**

**Separators for elements of a list**

**LinKerBasis is user-unfriendly**

**CoCoAManual: AffHilbertFn accepts (...)**

**Eigenvectors: inconsistent return (...)**

**IsInRadical: for monomial ideals**

**Use Flatpak and/or Snap on Linux?**

**RealRoots: rational roots (but (...))**

**MinPoly for matrix: fix in cocoalib (...)**

**SLUG: filling an array**

**append is slow**

**ker: for PolyAlgHom from QQ[x,y,z] (...)**

**GDPR: website, mailing list**

**MSatLinSolve: req minor improvements**

**Online manual entry for RingElem (...)**

**ShapeLemma: no manual entry**

**Split BuiltinFunctions-CoCoALib.C (...)**

**Interpreter: fns which accept INT (...)**

**Vim Plugin for CoCoA**

**Automatic conversion from RINGELEM (...)**

**CoCoA-5 manual: incorrect empty (...)**

**CoCoA manual: entry for operators, (...)**

**Package Edgeldeal not documented**

**New function: find ?**

**GFan also for Microsoft?**

**GUI with Qt5**

thmproving package

Manual entry for NewPolyRing

MakeTerm: implement in C++

Stack overflow reading long list (...)

HTML manual: search using keywords?

Emacs UI: cocoa5-shell-check-process (...)

Disable readline if input is redirected

Surprising parser error: INT+DOT+IDENTIFIER

Automatic way to produce statically (...)

Use symbolic links for release (...)

Filenames in release CoCoAManual/html (...)

IntersectList or IntersectionList

Get indexed indets from a polyring

Website: link to JSAG?

HilbertSeries: make into proper (...)

Lin alg with polys

Documentation for making ring with (...)

Emacs UI: indentation in a package

Use "special" names for variables (...)

SystemCommand in Microsoft version

More flexible ring creation syntax (...)

Initial ring

Interpreter fn Value::from can (...)

RingElem and IndetSymbols not compatible

Install CoCoA-5 on MacOS-10.15+

New functions: argmin, argmax

foreach with ref to list entry?

CoCoA coding conventions for parser/interpreter?

CoeffOfTerm: in CoCoALibSupplement

Man page for UniversalGBasis

Add sagbi package

Emacs: avoid making buffer visible (...)

subst: not checking args properly

**DivAlg slower than NR**  
**elim for modules**  
**Geometrical theorem proving package**  
**What does rad do?**  
**RMap and image: obsolescent?**  
**ApproxSolveTF**  
**Slow sqfr: rad(f)**  
**New fn ElapsedTimeFrom?**  
**Unhelpful behaviour in "compatibility (...)**  
**SqFreeFactor crashes over non-perfect (...)**  
**Doc for the various Builtin files**  
**EmacsUI: annoying colours**  
**NewMat: should be obsolescent?**  
**Use filesystem::path instead of (...)**  
**Unexpected or unhelpful error using (...)**  
**Missing/Incomplete manual entries**  
**MinSubsetOfGens sometimes very (...)**  
**RealRoots: crashes after interrupting**  
**Allow user to choose whether to (...)**  
**ApproxSolve and RationalSolve take (...)**  
**Potentially confusing prompt: waiting (...)**  
**Jordan Normal Form?**  
**GCDList not documented**  
**Refactor C++ impl in OnlineHelp**  
**BuiltinFunctions-GFan includes (...)**  
**Should Starting be case-insensitive?**  
**Manual entry for random (see also)**  
**Release CoCoA 5.4.2**  
**Preliminary packages**  
**Linux: just 1 executable, should (...)**  
**Documentation/Manual for HilbertFn**  
**ManExamples target: need t reset (...)**  
**NewPolyRing with indices -- better (...)**  
**Quitting can be slow**

Continued fraction: arg type RAT (...)  
GenReprCompute: SERIOUS ERROR  
Strange bug: demo-Osaka2015  
Makefile problem: needlessly relinks (...)  
CoCoA-5 - CoCoA-5.4.4  
Approximate BuchbergerMoeller: (...)  
CoCoAManual: General part of the (...)  
Emacs UI: keywords in multiline (...)  
Manual: remove old stuff about (...)  
Revive old CoCoA4 package called (...)  
Emacs UI: slow with long lines  
Poor memory management?  
SLUG: RationalSolve slow and stupid  
Add CoCoA5 function NmzHilbertBasisKer  
BuiltinOneLiners -- less precise (...)  
CantStop playing CantStop  
Refine Poset impl & doc  
Verbosity level in CoCoA5  
EvalPolyAtMat  
Make it easy to run the tests in (...)  
Better error mesg for 1.2.3.4?  
CoCoA web site "analytics"  
Difference between seealso and (...)  
Add CoCoA-5 syntax: syz(<F,> list (...)  
New function ModuleElems? (like (...)  
CoCoA-5 - CoCoA-5.?.?  
(short) manual for emacs interface  
GUI: open file "with C5"  
Error/warning if fn-proc is neither (...)  
sort is too slow  
BringIn should map only the indets (...)  
rethrow in Try .. UponError .. (...)  
I:f (IDEAL and RINGELEM) -- (...)  
Qt GUI: Make better distinction (...)

GUI: Add an edit menu to the top (...)  
C-c C-p in emacs goes to wrong (...)  
Negate LIST, MAT,...  
Template for unaryMinus?  
InputForm for output readable as (...)  
Appunti per (eventuale) tesi triennale (...)  
More curiously slow code -- squaring (...)  
Add LucasTest to cocoa5?  
TeXmacs interface  
--fullCoCoALibError prints too (...)  
Which functions are defined in (...)  
Documentation for Parser/Interpreter  
GUI: message "running.." (close (...)  
system variables  
Colon operator, 2nd arg  
allow single function call in "use" (...)  
Hilbert: Redesign hp.cpkg5 and (...)  
port optimized resolutions to CoCoA-5  
intersection (all lower case)  
Allow user to give a name to a (...)  
Bug or feature for protected name? (...)  
Emacs UI: Name of emacs init file  
Emacs UI: very slow when input (...)  
Assignment to protected variable  
Port function NewSymbol/NewSymbols (...)  
Automatic conversion from INT (or (...)  
interpolate  
Emacs UI: indentation is wrong (...)  
Eliminate keyword Alias?  
gcd too slow for large degree univariate (...)  
Unique copies of rings in CoCoA-5  
Warning about variable hiding another (...)  
ScalarProduct accepts MatrixRow?  
Cleaning: Cruft in CoCoA-5 packages

**New C5 fn for adjusting the warning (...)**  
**Toric: resurrect function TestSet (...)**  
**New operators: += -= \*= /=**  
**Resurrect MakeCheck()**  
**GUI: better name for the graphical (...)**  
**efficient subalgebras**  
**Interpreter.C: remove calls to (...)**  
**GUI: qutting provokes Imminent (...)**  
**Add functions based on MayerVietorisTree**  
**Output Betti numbers**  
**Windows-GUI: compilation with MinGW**  
**New operations? ScalarProduct(MODULELEM,LIST), (...)**  
**Unique copies of free modules?**  
**Emacs UI: use "warning colour" (...)**  
**MakeSet can be very slow**  
**eval: in which ring should the (...)**  
**use command, ring syntax, RingOf**  
**Ring ID: separate index values (...)**  
**Emacs UI: endfunc does not indent (...)**  
**Emacs UI: C-c C-\ copies line cursor (...)**  
**NUL char in input terminates CoCoA-5**  
**Emacs UI: swapped splitting**  
**Credits to CoCoA-5 contributors**  
**Add more operations for modules**  
**External Libs: missing dependencies (...)**  
**External libs: specifying I/O streams (...)**  
**Primary Decomposition in CoCoA-5**  
**Elementary transcendental functions (...)**  
**IsDefined does not follow reference (...)**  
**New function: LeastDegPolynomial (...)**  
**CoCoA type "cone"**  
**Emacs UI: send-region and send-line (...)**  
**floor, ceil, and NearestInt for (...)**  
**append has bad complexity**

Interpreter is too slow reading (...)  
subst: allowed also for indets (...)  
LOGAR: make CoCoA-5 easier to use  
Escaped newline to allow a long (...)  
When is a semicolon needed to end (...)  
use command: unhelpful error if (...)  
CallOnGroebnerFanIdeals: better (...)  
Empty matrix: warning, error, or (...)  
ciao, exit, quit can be used not (...)  
Improve coverage of CoCoA-5 tests  
Managing credits  
New function: IdealAndSeparatorsOfPoints  
New function: MakeMultiset?  
CoeffSize: function to measure (...)  
GroebnerFanIdeals: order matrices (...)  
init file obligatory?  
New function: RingQQi()? extension (...)  
New syntax for creating poly rings?  
External dependencies for building  
Example of slow LEX GBasis computation  
ScalarProduct: exact defn and manual (...)  
Improve error message when args (...)  
CoCoAManual: improved search, or (...)  
PolyRing constructor: NewOrdvArith (...)  
EmacsUI: interrupt copies line (...)  
GUI: bugs and slugs  
CoCoA Online: install (using InteractiveShell)  
Port RowMat, ColMat, MatByRows,... (...)  
Generic Timeout for CoCoA-5?  
Latex: matrix  
New function: gin for algebraic (...)  
CoCoA should read unicode  
Allow Interruption of printing?  
incr and decr are slow



**New Fn: make a homogeneous list (...)**  
**LinearSimplify: sometimes not optimal**  
**Matrixrow-functions**  
**Create a directory**  
**Emacs UI: open manual pages in (...)**  
**Clean up package points.cpkg**  
**User forum?**  
**Windows: Qt-Gui does not link correctly**  
**Daft slug**