

## CoCoALib - Feature #144

Feature # 143 (In Progress): Buchberger-Moeller (parent task)

### Buchberger-Moeller: generic impl

01 May 2012 11:35 - John Abbott

<b>Status:</b>	Closed	<b>Start date:</b>	01 May 2012
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	John Abbott	<b>% Done:</b>	100%
<b>Category:</b>	New Function	<b>Estimated time:</b>	20.00 hours
<b>Target version:</b>	CoCoALib-0.99531	<b>Spent time:</b>	10.75 hours
<b>Description</b>			
Implement generic BM algorithm over any field. Aim is to make impl clean rather than fast.  Each input ideal is represented as a set of commuting matrices (one for each indet).			
<b>Related issues:</b>			
Related to CoCoALib - Feature #121: Porting "IdealOfPoints"		<b>Closed</b>	<b>04 Apr 2012</b>
Related to CoCoALib - Feature #123: IdealOfPoints with generic coeffs		<b>New</b>	<b>04 Apr 2012</b>
Related to CoCoALib - Bug #349: IdealOfPoints: gens are actually a GBasis		<b>Closed</b>	<b>18 May 2013</b>

### History

#### #1 - 19 Nov 2012 10:34 - John Abbott

- Priority changed from Normal to Urgent

#### #2 - 22 Nov 2012 12:45 - John Abbott

- Status changed from New to Resolved

- Priority changed from Urgent to Normal

- % Done changed from 0 to 30

JAA has implemented a first prototype in CoCoALib.  
It works on two simple examples. Still need to:

- make it accessible from CoCoA-5
- write manual for CoCoALib
- write manual for CoCoALib
- refine the code to make it cleaner/more efficient (avoid wasteful copies)

The code is very simplistic, probably too simplistic (e.g. it cannot produce the separators).  
The public interface is probably too simplistic too.

#### #3 - 21 Jan 2013 15:30 - John Abbott

- Category set to New Function

- Status changed from Resolved to Feedback

- Assignee set to John Abbott

- Target version set to CoCoALib-0.99534 Seoul14

- % Done changed from 30 to 60

Improved impl to handle case where NumPts differs from NumIndets.

Added **IdealOfPoints** to CoCoA-5.

Added a test (a bit too simple really).

Added doc (both for CoCoALib and CoCoA-5).

Decided to leave code as is (simple but inefficient) because it is so simple that there are obviously no bugs (but don't mention "bus error"). It will be a **good reference impl**.

#### **#4 - 29 May 2013 16:54 - John Abbott**

- *Status changed from Feedback to Closed*

- *% Done changed from 60 to 100*

This has been in feedback for 2 months without problems (and it has been used).

It may well become largely obsolete when the new impl has been completed, but it is always a good reference (and fall-back impl when some niftier impl cannot be used).

#### **#5 - 29 Oct 2013 14:50 - Anna Maria Bigatti**

- *Target version changed from CoCoALib-0.99534 Seoul14 to CoCoALib-0.99531*