

CoCoALib - Slug #1588

ElimMat is slow

15 Apr 2021 10:15 - John Abbott

Status:	New	Start date:	15 Apr 2021
Priority:	Low	Due date:	
Assignee:		% Done:	0%
Category:	Improving	Estimated time:	0.00 hour
Target version:	CoCoALib-0.99900	Spent time:	0.35 hour
Description			
ElimMat is rather slow for larger inputs:			
<pre>/**/ t0 := CpuTime(); M := ElimMat(1..50,100); TimeFrom(t0); 0.470 /**/ t0 := CpuTime(); M := ElimMat(1..100,200); TimeFrom(t0); 3.681</pre>			
Complexity appears to cubic.			
Related issues:			
Related to CoCoALib - Slug #1057: Slug: Polynomial ring constructor slow with ...		In Progress	04 May 2017

History

#1 - 15 Apr 2021 10:15 - John Abbott

- Related to Slug #1057: Slug: Polynomial ring constructor slow with (big) matrix ordering added

#2 - 15 Apr 2021 10:17 - John Abbott

My guess is that the code repeatedly calls rank, but we should be able to be "clever" in some common cases.

Is it really worth making the effort? Don't know; hence **low priority**.

#3 - 16 Feb 2024 17:27 - John Abbott

- Target version changed from CoCoALib-0.99850 to CoCoALib-0.99900

#4 - 22 Mar 2024 09:29 - John Abbott

I though we had a class for incremental gaussian reduction. That should be useful in this case!

We can also make a much faster impl for the case of normal elim orders with standard grading.