

CoCoA-5 - Slug #1392

ApproxSolve: another slow example

13 Jan 2020 20:48 - John Abbott

Status:	Closed	Start date:	13 Jan 2020
Priority:	Normal	Due date:	
Assignee:	Anna Maria Bigatti	% Done:	100%
Category:	enhancing/improving	Estimated time:	1.55 hour
Target version:	CoCoA-5.4.0	Spent time:	1.55 hour
Description			
Here is another seemingly simple system where ApproxSolve is unexpectedly slow			
<pre>use QQ[x,y,z]; L := [x^4 -y*z^3 +z^4, y^4 -x^2*y*z +2*x*z^3, z^4 -x*y^2 +3*y^3]; solns := ApproxSolve(L);</pre>			
Related issues:			
Related to CoCoA-5 - Slug #907: ApproxSolve very slow on this example		Closed	14 Jul 2016

History

#1 - 13 Jan 2020 20:52 - John Abbott

It took about 3mins on my computer: anyway not more than 220s.

#2 - 14 Jan 2020 08:27 - Anna Maria Bigatti

- Related to Slug #907: ApproxSolve very slow on this example added

#3 - 16 Jan 2020 16:31 - Anna Maria Bigatti

- Status changed from New to In Progress

- Assignee set to Anna Maria Bigatti

- % Done changed from 0 to 50

We (Robbiano and I) found a way to solve it quickly: compute the radical first!

```
/**/ t_0:=CpuTime(); SA := ApproxSolve(gens(radical(ideal(L)))); TimeFrom(t_0);
0.949
```

Obviously, when I wrote the code in ApproxSolve, the radical was not as good as it is now ;-)
I'll change the code in ApproxSolve.cpkg5 so that it computes the radical internally.

#4 - 16 Feb 2021 14:09 - John Abbott

- Description updated

- Status changed from In Progress to Resolved

- % Done changed from 50 to 80

The example given is quite quick now (0.5s on my computer).
Marking as "resolved" (don't know by whom or when).

#5 - 24 Sep 2021 22:21 - John Abbott

- *Description updated*
- *Status changed from Resolved to Closed*
- *% Done changed from 80 to 100*
- *Estimated time set to 1.55 h*