

CoCoALib - Feature #762

ExternalLib-GFan: first prototype

28 Aug 2015 09:02 - Anna Maria Bigatti

Status:	Closed	Start date:	28 Aug 2015
Priority:	Normal	Due date:	
Assignee:	Anna Maria Bigatti	% Done:	100%
Category:	New Function	Estimated time:	24.00 hours
Target version:	CoCoALib-0.99540 Feb 2016	Spent time:	24.00 hours
Description			
Make a first prototype of communication with GFan. (more evolved and specific tasks will be separate issues)			
Related issues:			
Related to CoCoALib - Feature #180: GlobalManager: registration of global var...		Closed	07 Jun 2012
Related to CoCoALib - Design #763: GlobalManager: initialization compatible w...		In Progress	01 Sep 2015
Related to CoCoALib - Design #769: CoCoALib cone		In Progress	03 Sep 2015
Related to CoCoALib - Feature #780: GroebnerFan/ExternalLib-GFan: improve pac...		In Progress	24 Sep 2015
Related to CoCoA-5 - Feature #903: New function CallOnGroebnerFanIdeals: call...		Closed	04 Jul 2016

History

#1 - 30 Aug 2015 16:46 - Anna Maria Bigatti

Get inspiration from Macaulay2:

<http://www.math.uiuc.edu/Macaulay2/doc/Macaulay2-1.8.2/share/doc/Macaulay2/gfanInterface/html/>

and Singular (only for tropical)

http://www.singular.uni-kl.de/Manual/3-1-6/sing_1881.htm#SEC1957

#2 - 01 Sep 2015 11:09 - Anna Maria Bigatti

What do we want?

- cones (CoCoACone=NmzCone+GFan, or two separate implementations inheriting from a base class)
- fans
- Groebner fan of an ideal (the fan itself or the GBases?)

Aim for this week:

- prototype implementetation of a GFan object for cone (freely, but following the names we chose for Normaliz)
- prototype function to compute the GBases (either through GFanLib, or directly in CoCoA, with the help of Anders ;-)

#3 - 24 Sep 2015 18:11 - Anna Maria Bigatti

- Status changed from New to Closed
- Assignee set to Anna Maria Bigatti
- % Done changed from 0 to 100
- Estimated time changed from 15.00 h to 24.00 h

First prototype is done and working!!

Current design is:

- cone functions are in CoCoALib

- GroebnerFan algorithm is in a CoCoA-5 package: GroebnerFan.cpkg5 (by Anders N. Jensen)

Plans for the future:

- a.1 - generalize cocoa-cone
- a.2 - make a CONE type in cocoa-5
- b.1 - improve the package
- b.2 - implement is in cocoalib

#4 - 24 Sep 2015 18:23 - Anna Maria Bigatti

(Rudimentary) documentation is done.

#5 - 24 Mar 2016 08:04 - George Bateman

[GFan](#)

#6 - 04 Jul 2016 11:44 - Anna Maria Bigatti

- Related to Feature #903: New function *CallOnGroebnerFanIdeals*: call function on GFan ideals added