

CoCoALib - Feature #1582

Factorization in $K(a,b)[x,y]$

05 Mar 2021 09:35 - John Abbott

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|---|------------------|------------------------|--------------------|
| Status: | New | Start date: | 05 Mar 2021 |
| Priority: | Normal | Due date: | |
| Assignee: | | % Done: | 0% |
| Category: | Improving | Estimated time: | 0.00 hour |
| Target version: | CoCoALib-0.99900 | Spent time: | 0.20 hour |
| Description | | | |
| Florian would like to have factorization of polynomial over a function field e.g. $QQ(a,b)[x,y]$. | | | |
| This would also permit implementation of primary decomposition for general ideals (not just 0-dim). | | | |
| Related issues: | | | |
| Related to CoCoALib - Feature #1580: New fn prim for polys | | Closed | 25 Feb 2021 |

History

#1 - 05 Mar 2021 09:37 - John Abbott

Presumably the following approach should work:

- map into $K[a,b,x,y]$ after clearing denoms
- discard any factors not involving x,y via a content computation
- factorize in $K[a,b,x,y]$
- map factors back into original ring

Looks easy! Well, not too horribly hard...

#2 - 12 Mar 2021 09:24 - John Abbott

- Related to Feature #1580: New fn prim for polys added

#3 - 07 Mar 2024 20:23 - John Abbott

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