

noro_mwl

noro_mwl User's Manual
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1 MWL h 膊宴若 noro_mwl.rr

ヤ , asir-contrib 宴若吾 蚊 , MWL h 膊宴若 'noromwl.rr' や 茯 .
 宴若吾 筈帥 , 障 'noromwl.rr' 若.
 [1518] load("noromwl.rr");
 宴若吾 醇違若喝冴 , mwl. や.

1.1 MWL h 膊

1.1.1 mwl.pdecomp, mwl.pdecomp_ff

```
mwl.pdecomp(ideal, varlist[|gbcheck=yesno, f4=yesno])
mwl.pdecomp_ff(ideal, varlist, mod[|gbcheck=yesno, f4=yesno]) :: 0 罫 や ideal
や や 演 ; .
return 筈荀脰 鴻
ideal 素縷 鴻
varlist 素違 鴻
mod 脰
yesno 0 障 1
```

- 0 罫 や ideal 素違 絨素縷 茹 c , 茲綺 や ideal 兄 睥違菴 や 鴻脰 荀脰, ideal 育莨後綺 違 弱阪脰 荀脰 鴻菴.
- mwl.pdecomp 遺箏, mwl.pdecomp_ff GF(mod) (筈 mod 筈) 箏 茹 c 茵.
- 阪 鴻 脰 や , 綽羣脰 , 素違 絨素縷 素縷 鴻 c , 羣脰 菴 緇. 羣脰茹 c ュ , や 障丈脰茹 c 合羣脰茹 c 緇.
- , 違 弱阪荐膊 nd_gr_trace , 激 f4=1 紵 nd_f4_trace .
- 激 gbcheck=0 紵, 違 弱阪荐膊 . 翫, 素 絨腴榊 脰阪 緇, 祉 翫 , 筈 薑脰違菴翫 . 阪や 鴻 演 ュ 眼, 阪ユや 茹 c c 荐若.

```
[1520] load("noromwl.rr");
[1554] B=[(x+y+z)^2*(x+y-z)^2, (x+y*z)^2*(x-y*z)^2,
(x^2+y^2+z^2)^2*(x^2-y^2-z^2)^2]$
[1555] V=[x,y,z]$
[1556] L=mwl.pdecomp(B,V)$
[1557] C=L[0]$
[1558] G=L[1]$
[1559] length(C);
5
[1560] C0=primadec(C[0],V)$
[1561] C0[0];
[[x^2+(2*y-2*z)*x+y^2-2*z*y+z^2,...],[z^2+z+1,y-z-1,x+1]]
[1562] CM=mwl.pdecomp_ff(B,V,31991|f4=1)$
[1563] length(CM[0]);
5
```

1.1.2 mwl.generate_coef_ideal

```

mwl.generate_coef_ideal(f[|simp=yesno])
    :: x, y, t  縹 f  縹句 (x(t),y(t))  違  合縹 や
return  紊縹 鴻  違  鴻  鴻
f      紊縹
yesno  0 障 1

```

- $f(x,y,t)=(y^2+c1(t)xy+c3(t)y)-(x^3+c2(t)x^2+c4(t)x+c6(t))$, $x=a_m t^m+\dots+a_0$,
 $y=b_n t^n+\dots+b_0$ (a_i, b_j 篆) f 撮ヤ , t 鴻 箏 鴻 鴻 $ideal$, 篆違
 $鴻 vlist=[b_0,\dots,b_n,a_0,\dots,a_m]$ $[ideal,vlist]$ 菴.
- x, y 違, f 浦紘.
- 激 $simp=1$ 紘翫, $a_m^3-b_n^2 ideal$ 障 翫 , 違紊 v 紘ヤ, $a_m=v^2, b_n=v^3$
 a_m, b_n 羔祉脰菴.

```

[1519] load("norow_mwl.rr")$
[1553] F=y^2-(x^3-x+t^2)$
[1554] L=mwl.generate_coef_ideal(F);
[[b3^2-a2^3,2*b3*b2-3*a2^2*a1,2*b3*b1+b2^2-3*a2^2*a0-3*a2*a1^2,...],
[b3,b2,b1,b0,a2,a1,a0]]
[1555] L=mwl.generate_coef_ideal(F|simp=1);
[[-3*a1*v^4+2*b2*v^3,-3*a0*v^4+2*b1*v^3-3*a1^2*v^2+b2^2,...],
[b2,b1,b0,a1,a0,v]]

```

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