dep:=true;
eqns

```
result:=[];
for sAtt in eqs do
sAtt:=subs(op(sToDo),sAtt);
if type(rhs(sAtt),numeric) then sToDo:=[op(sToDo),sAtt]; end if;
if rhs(sA )<>0 en resul =[op(resul ,sA ; end if
                                                d
          е
 > calcDerivs:=proc(eqs,arg_name local cs,r,d,e( ) Tj 12 0 0 -357 14
   end proc:
    result;
    end do;
```

sars

0.031090 (1 + 0.20548 rs) ln 1 +

2

1.8

1.6

у

1.4

1.2

1 0

0.5

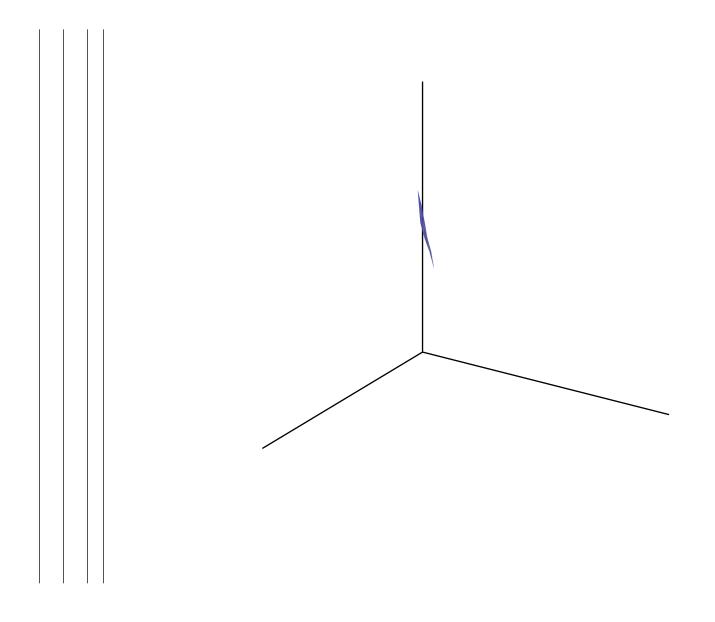
1

1.5 s 2

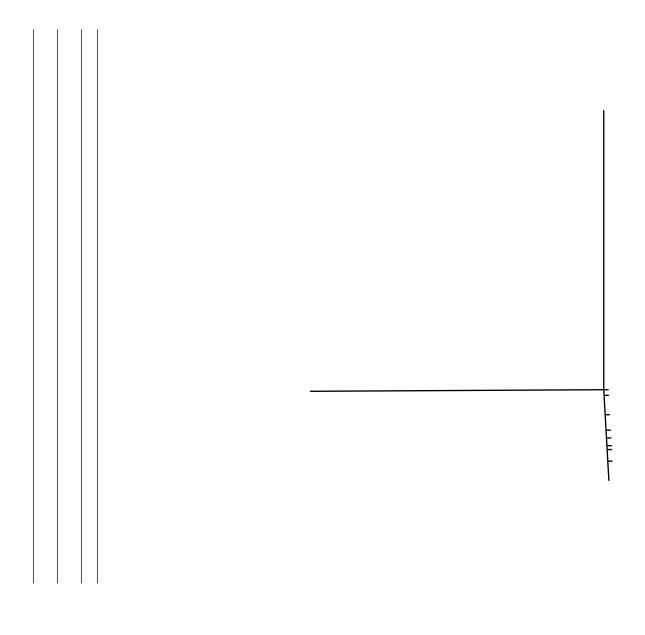
2.5

3

		μ=



			proc roc



deriv\_lda2:=[se

doubleprecision t1433 dou

doubleprecision	t74
doubleprecision	t75
doubleprecision	t1094
doubleprecision	cg26

doubleprecision kf

b

doubleprecision cg39 do

t68 = exp(-cg22 \* t66)

```
t129 = 0.1D1 / t62
cg5 = t129 * cg62 * t5
t131 = cg40 ** 2
t132 = 0.1D1 / t131
133 c
```

```
# t263
cg55 = cg4
t269 = t57 ** 2
cg14 = -0.2D1 / 0.9D1 * dble(t1) / 25 / t59 * t269
t273 = 0.1D1 / t62 / t61
t274 = cg
```

| | | cg24 = c

```
# 0.3436685857D1 * rs2rho * t259 * t263 + 0.3216364864D2 * t260 * t #628 * t262 * t120 + 0.5172501469D3 * t11 / t258 / t108 * t236 / t2

#61 / t22 * t611

cg37 = -t229 + 0.2137000000D0 * t230 * t612 + 0.2137000000D0 * t

#652 * t122 - 0.20 000000D1 * t235 * t618 + 0.999999999D0 * t110

#* t629 + 0.1608182432D2 * t260 * t634

cg64 = cg37

cg27 = -0 1328829340D-1 * rs2rho * t23 + 0.999999999900 * t111
```

```
t807 = 0.1D1 / t806
t808 = t140 ** 2
t824 = t303 * cg55 * cg27
t8
```

| | | t1058 = t158 \* t1rho \* t890

| | | #08 + cg37

```
# + 0.400350D0 * t477 * cg18 * t80 * t1rho + 0.133450D0 * t145 * t3 #58 * cg33 - 0.400350D0 * t477 * t470 * t1497 + 0.133450D0 * t464
```

| t100 | #4 \* t553 + 0.266900D0 \* t329 \* t1759 \* trho + 0.266900D0 \* t373 \* | #t1533 \* t20<del>5532</del>

```
t #1876 + 0.533800D0 * t490 * t1885 + 0.533800D0 * t329 * t1885 - 0.2
```

 $glob\_eqs\_lsd4 := [my\_rhoa\ my\_rhob, my\_norm\_drho, my\_norm\_drhoa, my\_norm\_drhob, exc, exc\_rhoa\ exc\_rhob$ 

doubleprecision function cg94 (rhoa, rhob, c

doubleprecision t1 doubleprecision cg3

doublep

down bleprecision t247 down bleprecision t815

doubleprecision f

doubleprecision t165 doublepre

dou

t4 = 4 \*\* (0.1D1 / 0.3D1) t5 = t4 \*\* 2

t122 = cg3 \*\* 2

```
t183 = t181 * t182
cg74 = -0.638837320D-2 * rsrhoa * t37 + 0.1000000000D1
```

t244 = t96 \*\* 2 t246 = t89 / t244 t247 = cg13 \* t89 t249 = t91 \*\* 2 t250 = 0.1D1 / t28 . rsrhob = rsrhoa t31  $| \ | \ |$  t383 = -t378 \* t93 + 0.3D1 \* t90

exc\_norm\_drhob =

```
t577 = 0.1D1 / t77
t578 = cg38 ** 2
t583 = 0.1D1 / t78
cg53 = (0.4D1 / 0.9D1 * t577 * t578 + 0.4D1 / 0.3D1 * t57 *
```

cq

```
| t157
| * * (-0.1898925000D1 * t1214 + 0.3797850000D1 * t
```

#t571 \* t1259 \* t573) \* f \* t68 + cg17 \* f1rhob \* t68 - 0.4D1 \* t35

```
t2172 = t21418* t289

t1458 = t277 7 trhob

t1468 = cg55 * t100

t1770 = 0.2D1 * t1153 * t1rhob

t1473 = 0.2D1 * A1rhobho t * trhob

t1476 = 0.2D1 * A
```

```
cg #25 + 0.3D1 * t258 * t409 * cg43 + t99 * t1518 * t289 - t99 * t1521 # * t1441)
t1575 = t232 * t86
t1577 = t84 * t237
t1579 = t436
```

5

```
| | | #09 * cg86 + 0.133450D0 * t262 * t397 * cg31 + 0.66725D-1 * t101 *
```

```
#37 * t1772 + 0.2000000001D1 * t429 * t1772)
cg94 = exc_norm_drhob_norm_drhob
```