

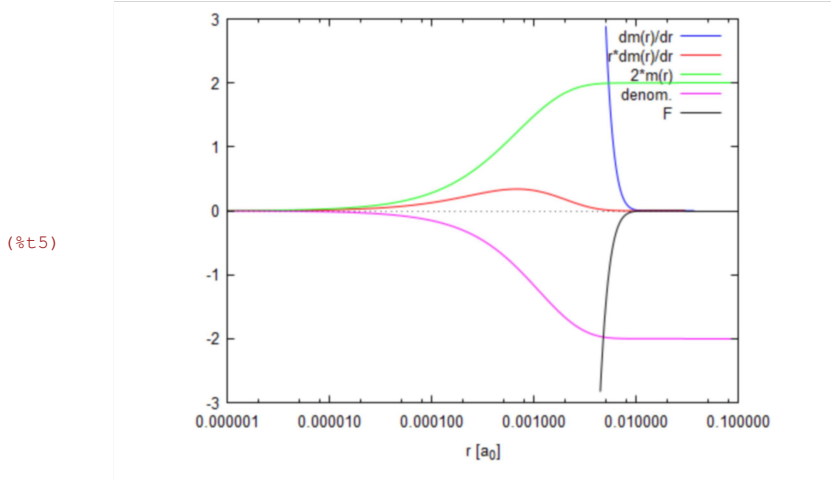
```
(%i1) kill(all);
(%o0) done
```

## 1 Eval F

```
(%i1) evF() := (m1: diff(m(r), r),
               m2: r*m1,
               m3: 2*m(r),
               m4: m2-m3,
               F: m1/(m2-m3)
               );
(%o1) evF() := (m1:  $\frac{d}{dr} m(r)$ , m2:  $r m1$ , m3:  $2 m(r)$ , m4:  $m2-m3$ , F:  $\frac{m1}{m2-m3}$ )
(%i2) m(r) := (2.-exp(log(2.)*exp(-r/R))) ;
(%o2) m(r) :=  $2 - \exp\left(\log(2) \exp\left(\frac{-r}{R}\right)\right)$ 
(%i3) evF() $
(%i4) [m1a,m2a,m3a,m4a,Fa]: ev([m1,m2,m3,m4,F], [R=0.0009]) $
(%i5) wxplot2d([m1a,m2a,m3a,m4a,Fa], [r,1.e-6,.1], [logx], [y,-3,3],
               [xlabel, "r [a_0]"],
               [legend, "dm(r)/dr", "r*dm(r)/dr", "2*m(r)", "denom.", "F"]) $
```

plot2d: some values were clipped.

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## 2 Eval modified F

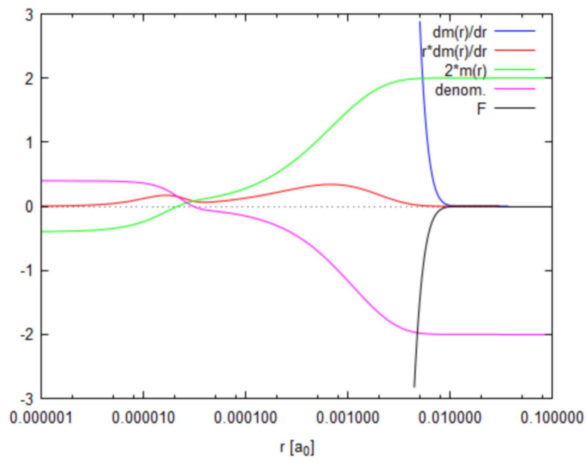
```
(%i6) m(r) := (2.-exp(log(2.)*exp(-r/R))
               -.2*exp(-(r/R_p)^2));
(%o6) m(r) :=  $2 - \exp\left(\log(2) \exp\left(\frac{-r}{R}\right)\right) - 0.2 \exp\left(-\left(\frac{r}{R_p}\right)^2\right)$ 
(%i7) evF() $
(%i8) [m1a,m2a,m3a,m4a,Fa]: ev([m1,m2,m3,m4,F], [R=0.0009, R_p=1.6e-5]) $
```

```
(%i9) wxplot2d([m1a,m2a,m3a,m4a,Fa], [r,1.e-6,.1], [logx], [y,-3,3],
[xlabel, "r [a_0]"],
[legend, "dm(r)/dr", "r*dm(r)/dr", "2*m(r)", "denom.", "F"])$
```

plot2d: some values were clipped.

plot2d: some values were clipped.

(%t9)



```
(%i10) wxplot2d([Fa], [r,1.e-6,.1], [logx], [y,-.9e5,.9e5],
[xlabel, "r [a_0]"],
[legend, "dm(r)/dr", "r*dm(r)/dr", "2*m(r)", "denom.", "F"])$
```

plot2d: some values were clipped.

(%t10)

