

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

(%i1) U: -U_0/(1+exp((r-R_0)/a_N));
(U)

$$-\frac{U_0}{e^{\frac{r-R_0}{a_N}}+1}$$


(%i3) -diff(U,r);
(%o3)

$$-\frac{U_0 e^{\frac{r-R_0}{a_N}}}{a_N \left( e^{\frac{r-R_0}{a_N}}+1 \right)^2}$$

```