Los valores de las constantes son:

```
ρ = 0.9
S0 = 2.637 / 2.637
σ = 0.03165594360356522
r = 0.18
t0 = 1
```

Out[139]= 0.9

Out[140]= 1.

Out[141]= 0.380094

Out[142]= 0.18

Out[143]= 1

Como podemos observar coinside con el u0 de ADM.

```
In[170]:= u0[x_, t_] := 0.009516666666666734 + 2.5730444444444434 * x
```

```
In[171]:= u0[x, t]
```

Out[171]= 0.00951667 + 2.57304 x

```
In[172]:= u0[S0, 1]
```

Out[172]= 2.58256

```
In[173]:= A0[S_, t_] := (D[D[u0[S, t], S], S])^2
```

```
A0[S, t]
```

Out[148]= 0

```
In[174]:= a0[S_, t_] := {(4.894795283664987` + 7606.728690945833` S)^2}
```

```
In[175]:= a0[S0, t0]
```

Out[175]= $\{5.79368 \times 10^7\}$

```
In[176]:= u1[S_, t_] :=
  -Integrate[-1 / 2 * σ^2 * S^2 * D[D[u0[S, t], S], S] + r * S * D[u0[S, t], S] - r, t] -
   ρ * σ^2 * (Integrate[-S^3 * A0[S, t], t])
```

```
In[177]:= u1[S, t]
```

Out[177]= 0. - (-0.18 + 0.463148 S) t

```
In[178]:= U1[S_, t_] := {-2.503757692331228` S^3 (4.894795283664987` + 7606.728690945833` S)^2 t -
    (-0.08` - 125.1878846165614` S^2 (4.894795283664987` + 7606.728690945833` S) + 0.08` S (-0.04328399294027511` + 4.894795283664987` S + 3803.3643454729163` S^2)) t}
```

In[179]:=
```
U1[S0, t0]
```
Out[179]= $\{-1.44107 \times 10^{8}\}$

In[180]:=
```
A1[S, t] := 2 * (D[D[u0[S, t], S], S]) * (D[D[u1[S, t], S], S])
```

In[181]:=
```
A1[S, t]
```
Out[181]= 0

In[182]:=
```
a1[S_, t_] := 0
```

In[183]:=
```
a1[S0, t0]
```
Out[183]= 0

In[184]:=
```
u2[S_, t_] :=
 -Integrate[-1 / 2 * σ^2 * S^2 * D[D[u1[S, t], S], S] + r * S * D[u1[S, t], S] - r, t] -
  ρ * σ^2 * (Integrate[-S^3 * A1[S, t], t])
```

In[185]:=
```
u2[S, t]
```
Out[185]= $0. + 0.18\ t + 0.0416833\ S\ t^2$

In[186]:=
```
U2[S_, t_] := 0.` + 0.18` t + 0.2574852406793702` S t^2
```

In[187]:=
```
U2[S0, t0]
```
Out[187]= 0.437485

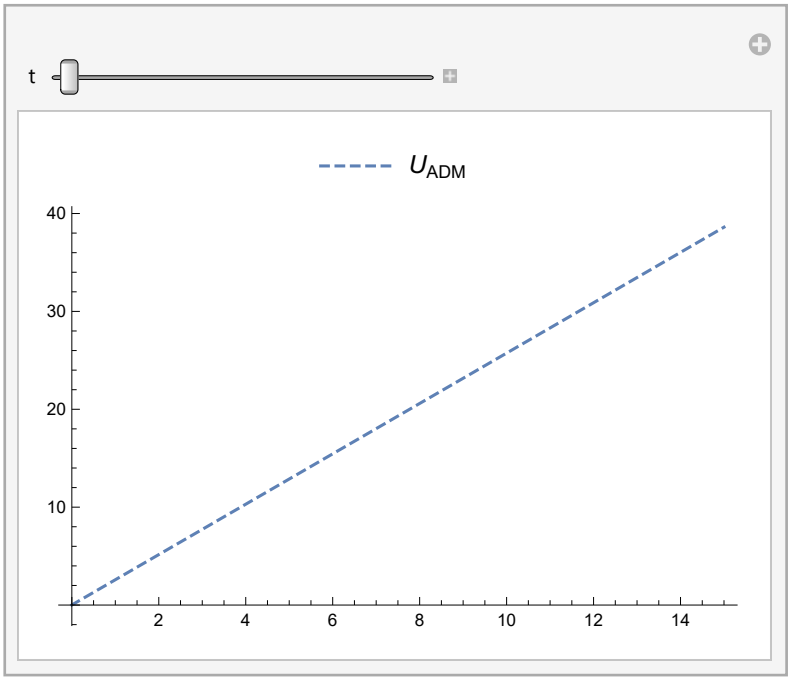
In[188]:=
```
u[S_, t_] := u0[S, 0] + u1[S, t] + u2[S, t]
```

In[189]:=
```
u[S, t]
```
Out[189]= $0.00951667 + 2.57304\ S + 0.18\ t - (-0.18 + 0.463148\ S)\ t + 0.0416833\ S\ t^2$

In[190]:=
```
U[S_, t_] := 0.009516666666666734` + 2.5730444444444434` S +
  0.18` t - (-0.18` + 0.4631479999999998` S) t + 0.04168331999999998` S t^2
```

In[191]:=
```
Manipulate[Plot[{U[S, t]}, {S, 0, 15}, PlotLegends → Placed[{"U_ADM"}, Above],
  PlotStyle → {Triangle, Dashed}, AxesOrigin → {0, 0}], {t, 0, 10}]
```

Out[191]=




In[197]:=
```
U[1, 5]
```

Out[197]= 3.1089

In[195]:=
```
(U[S0, 5] / 2.637 - 1) * 100
```

Out[195]= 17.8955