Los valores de las constantes son:

In[75]:=
```
ρ = 0.9
S0 = 14.515 / 14.515
σ = Sqrt[0.38009407863480477]
r = 0.18
t0 = 1
```

Out[75]= 0.9

Out[76]= 1.

Out[77]= 0.616518

Out[78]= 0.18

Out[79]= 1

Como podemos observar coinside con el u0 de ADM.

In[112]:=
```
u0[x_, t_] := -0.009389370985559907 + 15.894150659220383 * x
```

In[113]:=
```
u0[x, t]
```

Out[113]= $-0.00938937 + 15.8942\, x$

In[114]:=
```
u0[S0, 1]
```

Out[114]= 15.8848

In[115]:=
```
A0[S_, t_] := (D[D[u0[S, t], S], S])^2
```

In[116]:=
```
A0[S, t]
```

Out[116]= 0

In[117]:=
```
a0[S_, t_] := {(4.894795283664987` + 7606.728690945833` S)^2}
```

In[118]:=
```
a0[S0, t0]
```

Out[118]= $\{5.79368 \times 10^7\}$

In[119]:=
```
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[120]:=
```
u1[S, t]
```

Out[120]= $0. - (-0.18 + 2.86095\, S)\, t$

In[121]:=
```
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[122]:=
```
U1[S0, t0]
```
Out[122]= $\{-1.44107 \times 10^{8}\}$

In[123]:=
```
A1[S, t] := 2 * (D[D[u0[S, t], S], S]) * (D[D[u1[S, t], S], S])
```

In[124]:=
```
A1[S, t]
```
Out[124]= 0

In[125]:=
```
a1[S_, t_] := 0
```

In[126]:=
```
a1[S0, t0]
```
Out[126]= 0

In[127]:=
```
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[128]:=
```
u2[S, t]
```
Out[128]= $0. + 0.18\ t + 0.257485\ S\ t^2$

In[129]:=
```
U2[S_, t_] := 0.` + 0.18` t + 0.2574852406793702` S t^2
```

In[130]:=
```
U2[S0, t0]
```
Out[130]= 0.437485

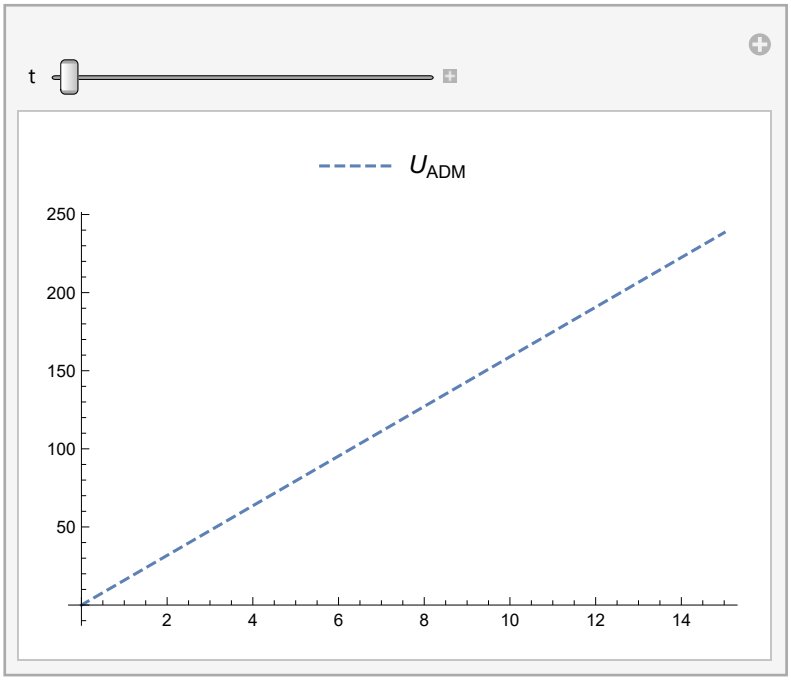
In[131]:=
```
u[S_, t_] := u0[S, 0] + u1[S, t] + u2[S, t]
```

In[132]:=
```
u[S, t]
```
Out[132]= $-0.00938937 + 15.8942\ S + 0.18\ t - (-0.18 + 2.86095\ S)\ t + 0.257485\ S\ t^2$

In[133]:=
```
U[S_, t_] := -0.009389370985559907` + 15.894150659220383` S +
  0.18` t - (-0.18` + 2.8609471186596687` S) t + 0.2574852406793702` S t^2
```

In[134]:=
```
Manipulate[Plot[{U[S, t]}, {S, 0, 15}, PlotLegends → Placed[{"U_ADM"}, Above],
  PlotStyle → {Triangle, Dashed}, AxesOrigin → {0, 0}], {t, 0, 10}]
```

Out[134]=



In[138]:=
```
U[1, 1]
```

Out[138]= 13.6413

In[110]:=
```
(U[S0, .5] / 14.515 - 1) * 100
```

Out[110]= 1.26531