Los valores de las constantes son:

In[1]:=
```
ρ = -0.9
S0 = 14.515 / 14.515
σ = .38009407863480477
r = 0.18
t0 = 1
```

Out[1]= -0.9

Out[2]= 1.

Out[3]= 0.380094

Out[4]= 0.18

Out[5]= 1

Como podemos observar coinside con el u0 de ADM.

In[6]:=
```
u0[x_, t_] := -0.009389370985559907 + 15.894150659220383 * x
```

In[7]:=
```
u0[x, t]
```

Out[7]= -0.00938937 + 15.8942 x

In[8]:=
```
u0[S0, 1]
```

Out[8]= 15.8848

In[9]:=
```
A0[S_, t_] := (D[D[u0[S, t], S], S])^2
```

In[10]:=
```
A0[S, t]
```

Out[10]= 0

In[11]:=
```
a0[S_, t_] := 0
```

In[12]:=
```
a0[S0, t0]
```

Out[12]= 0

In[13]:=
```
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[14]:=
```
u1[S, t]
```

Out[14]= 0. - (-0.18 + 2.86095 S) t

In[15]:=
```
U1[S_, t_] := 0.` - (-0.18` + 2.8609471186596687` S) t
```

In[16]:=
```
U1[S0, t0]
```

Out[16]= -2.68095

In[17]:=
```
A1[S, t] := 2 * (D[D[u0[S, t], S], S]) * (D[D[u1[S, t], S], S])
```

In[18]:=
```
A1[S, t]
```
Out[18]= 0

In[19]:=
```
a1[S_, t_] := 0
```

In[20]:=
```
a1[S0, t0]
```
Out[20]= 0

In[21]:=
```
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[22]:=
```
u2[S, t]
```
Out[22]= $0. + 0.18\ t + 0.257485\ S\ t^2$

In[23]:=
```
U2[S_, t_] := 0.` + 0.18` t + 0.2574852406793702` S t^2
```

In[24]:=
```
U2[S0, t0]
```
Out[24]= 0.437485

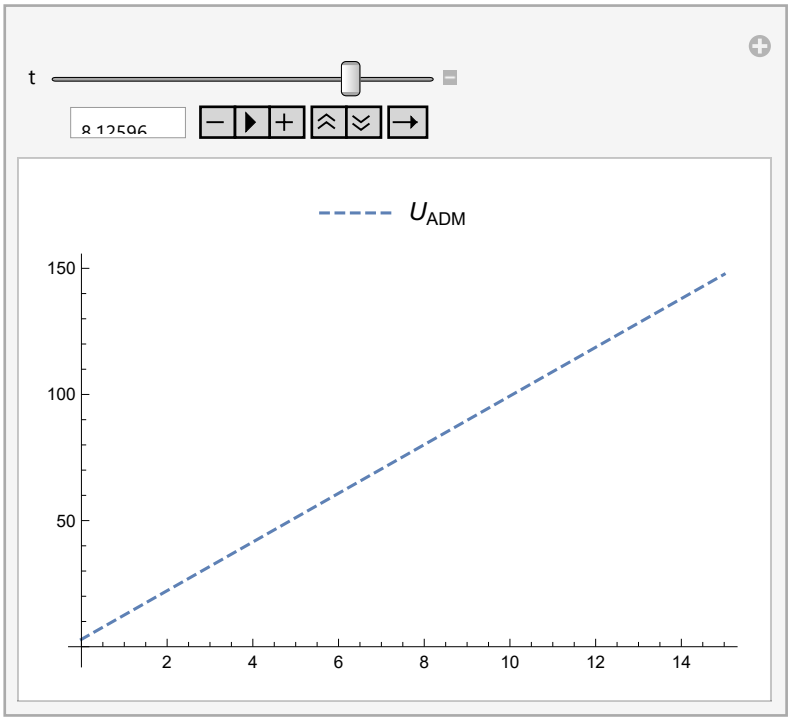
In[25]:=
```
u[S_, t_] := u0[S, 0] + u1[S, t] + u2[S, t]
```

In[26]:=
```
u[S, t]
```
Out[26]= $-0.00938937 + 15.8942\ S + 0.18\ t - (-0.18 + 2.86095\ S)\ t + 0.257485\ S\ t^2$

In[27]:=
```
U[S_, t_] := -0.009389370985559907` + 15.894150659220383` S +
  0.18` t - (-0.18` + 2.8609471186596687` S) t + 0.2574852406793702` S t^2
```

In[28]:=
```
Manipulate[Plot[{U[S, t]}, {S, 0, 15}, PlotLegends → Placed[{"U_ADM"}, Above],
  PlotStyle → {Triangle, Dashed}, AxesOrigin → {0, 0}], {t, 0, 10}]
```

Out[28]=



In[29]:=
```
U[1, 1]
```

Out[29]= 13.6413

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

Out[30]= 1.26531