

Check on the Analytical Solution

```
# Let  $T = 1s$  and  $a = 1$   
figure(figsize=(6,2))  
a = 1  
t = arange(-1, 3.001, .001)  
x = ssd.step(t) - ssd.step(t-1)  
h = a*exp(-a*t)*ssd.step(t)  
y,ty = ssd.conv_integral(x,t,h,t)  
plot(ty,y)
```

}

Generate $x(t)$ and $h(t)$
then numerically convolve
with *scipy.signal.convolve*
used in the core calculation

(...Repeat for two more plots with $a = 5$ and 10)

Numerical Convolution Filter Output for $T=1$

