checking_form_in_manuscript

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[1]:
```
import numpy as np
from sympy import integrate, exp, symbols, frac, Rational, erf
from sympy.plotting import plot
import matplotlib.pyplot as plt

from sympy import init_printing

init_printing()
```

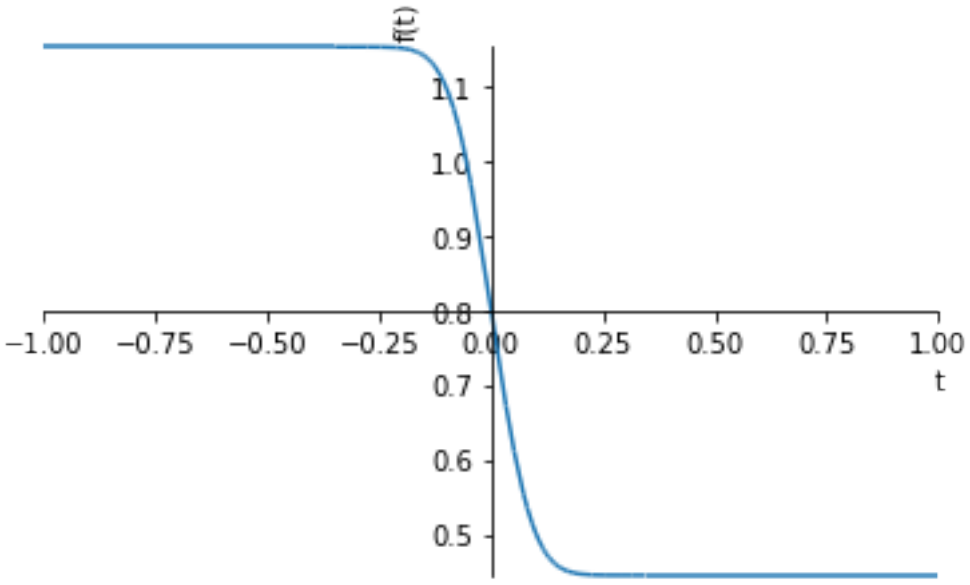
The paper writes

[2]:
```
A, t, sigma, x = symbols('A t \sigma, x')

func = A + (1 - A)*( Rational(1, 2) - integrate(exp(-x**2), (x, 0, t/sigma)) )
func
```

[2]:

$$A + (1 - A)\left(-\frac{\sqrt{\pi}\,\mathrm{erf}\left(\frac{t}{\sigma}\right)}{2} + \frac{1}{2}\right)$$

[3]:
```
A_val = 0.6
func_subs = func.subs([(A, A_val), (sigma, 0.1)])

plot(func_subs, (t, -1, 1))
```



[3]: <sympy.plotting.plot.Plot at 0x11a4d9710>

[4]:
```
negative_limit = func_subs.evalf(subs=dict(t=-1e9))
positive_limit = func_subs.evalf(subs=dict(t=1e9))

print(f"The function for A={A_val} goes from {negative_limit:.3f} to␣
↪{positive_limit:.3f}")
```

```
The function for A=0.6 goes from 1.154 to 0.446
```

[ ]: