Solving Second Order ODE using Artificial Neural Networks

d2y/dx2 = f(x,y,dy/dx), where:

f(x,y,dy/dx) = -1/5*exp(-x/5)*cos(x) - 1/5*dy/dx - y

Boundary conditions: y(0) = 0 and d/dx(y=0) = 1

Results:

The minimized cost function is: 0.2412

Plot showing results: