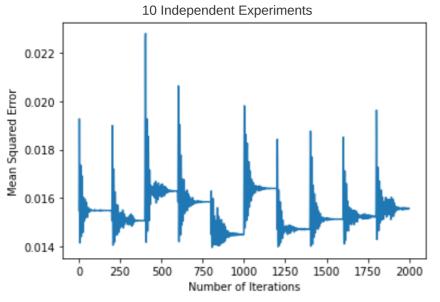
## **TanH Function Approximation with Sigmoid Activation**



Over 10 experiments (each with 200 iterations)

## **TanH Function Approximation with Linear Activation** 10 Independent Experiments 0.2500 0.2475 Mean Squared Error 0.2450 0.2425 0.2400 0.2375 0.2350 0.2325 250 500 1000 1250 1500 0 750 1750 2000

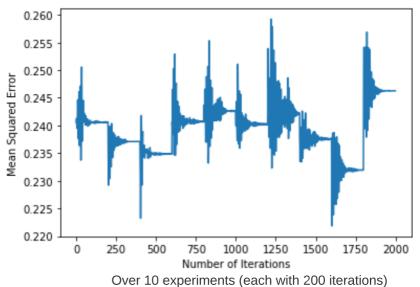
Over 10 experiments (each with 200 iterations)

Number of Iterations

## Figure 4

## **TanH Function Approximation with TanH Activation**





TanH function approximation:

PSO parameters	Sigmoid activation function	Hyperbolic Tangent activation function	Linear activation function
Swarm size	100	100	100
Informants	6	20	16
Epsilon	0.2	0.2	0.2
Alpha range	0.9	0.9 to 0.91	0.9
Position range	-0.01 to 0.09	-0.01 to 0.09	-0.01 to 0.01
Velocity range	0.05 to 0.25	0.05 to 0.25	0.15 to 0.25
Cognitive component	1.2	1.2	1.5
Social component	3.7	3.9	4
Hidden Layer nodes	5	5	5
Least MSE (approx)	0.015	0.24	0.238