Relatório Final - Experimentos MLP (Keras)

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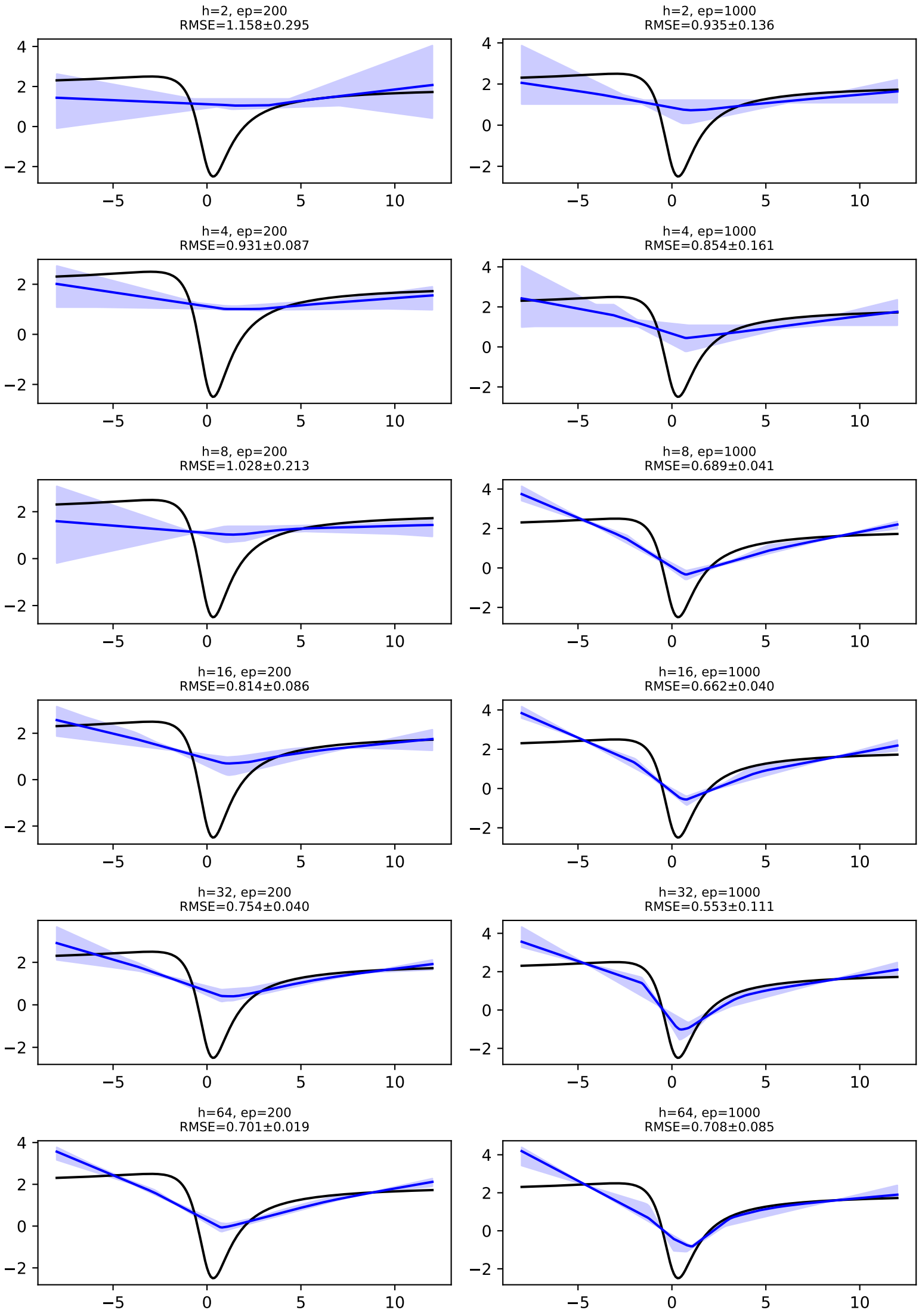
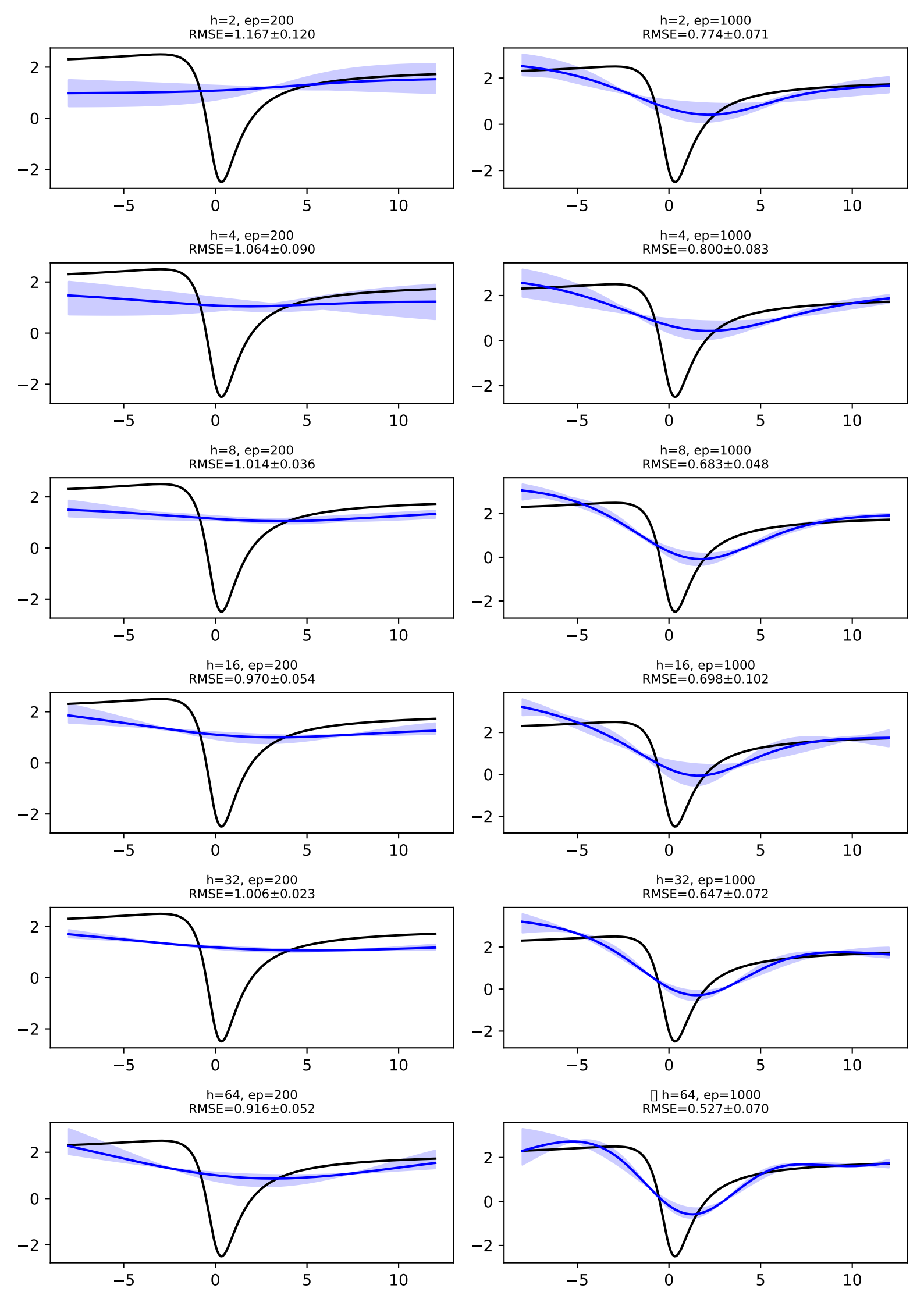
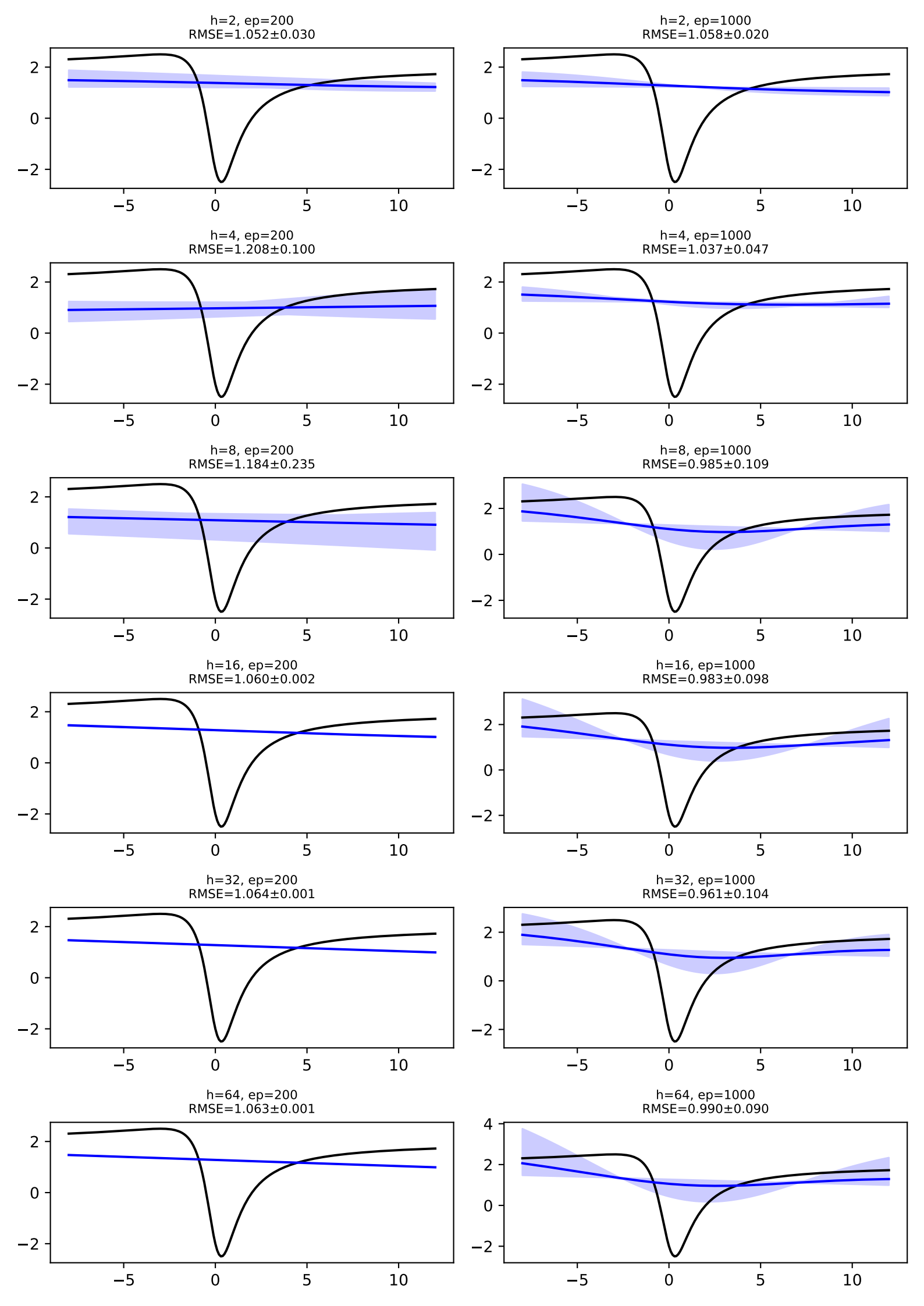

h=2, ep=200
RMSE=1.158±0.295
h=2, ep=1000
RMSE=0.935±0.136
h=4, ep=200
RMSE=0.931±0.087
h=4, ep=1000
RMSE=0.854±0.161
h=8, ep=200
RMSE=1.028±0.213
h=8, ep=1000
RMSE=0.689±0.041
h=16, ep=200
RMSE=0.814±0.086
h=16, ep=1000
RMSE=0.662±0.040
h=32, ep=200
RMSE=0.754±0.040
h=32, ep=1000
RMSE=0.553±0.111
h=64, ep=200
RMSE=0.701±0.019
h=64, ep=1000
RMSE=0.708±0.085


h=2, ep=200
RMSE=1.167±0.120
h=2, ep=1000
RMSE=0.774±0.071
h=4, ep=200
RMSE=1.064±0.090
h=4, ep=1000
RMSE=0.800±0.083
h=8, ep=200
RMSE=1.014±0.036
h=8, ep=1000
RMSE=0.683±0.048
h=16, ep=200
RMSE=0.970±0.054
h=16, ep=1000
RMSE=0.698±0.102
h=32, ep=200
RMSE=1.006±0.023
h=32, ep=1000
RMSE=0.647±0.072
h=64, ep=200
RMSE=0.916±0.052
h=64, ep=1000
RMSE=0.527±0.070


h=2, ep=200
RMSE=1.052±0.030
h=2, ep=1000
RMSE=1.058±0.020
h=4, ep=200
RMSE=1.208±0.100
h=4, ep=1000
RMSE=1.037±0.047
h=8, ep=200
RMSE=1.184±0.235
h=8, ep=1000
RMSE=0.985±0.109
h=16, ep=200
RMSE=1.060±0.002
h=16, ep=1000
RMSE=0.983±0.098
h=32, ep=200
RMSE=1.064±0.001
h=32, ep=1000
RMSE=0.961±0.104
h=64, ep=200
RMSE=1.063±0.001
h=64, ep=1000
RMSE=0.990±0.090

A melhor configuração encontrada foi tanh com 64 neurônios e 1000 épocas, obtendo RMSE médio de validação 0.527±0.070.

Redes com poucos neurônios não capturam bem as oscilações. O aumento do número de neurônios e epochs melhora o erro e a estabilidade. ReLU mostrou maior consistência, sigmoid maior variabilidade.