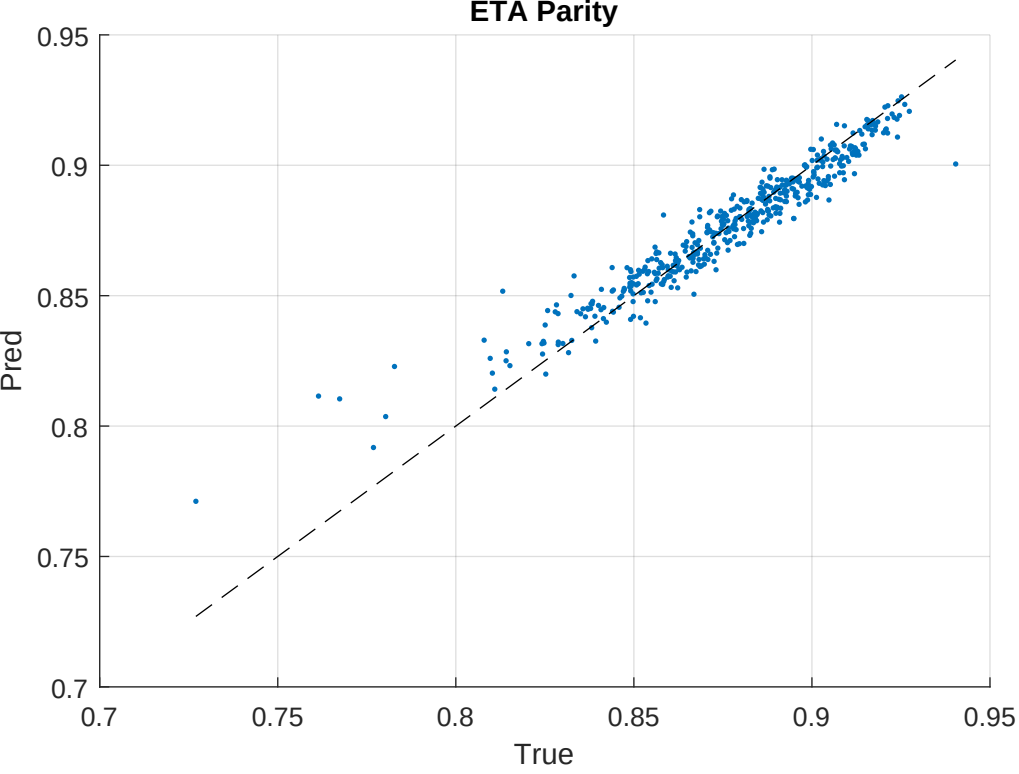
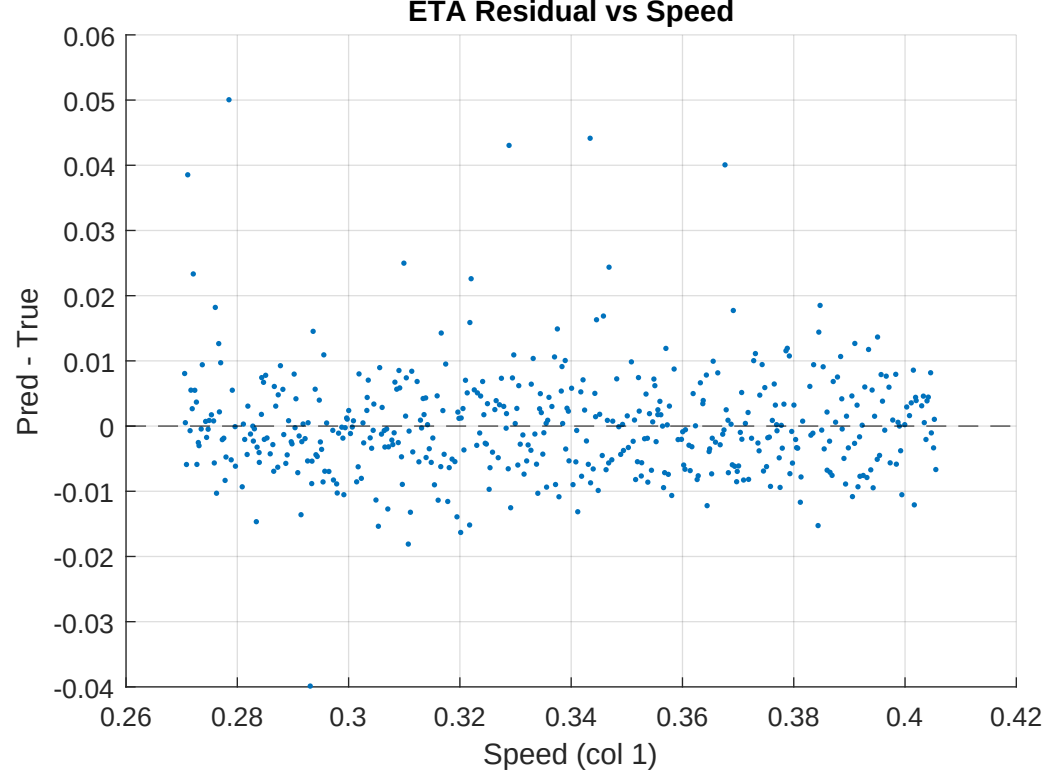
Turbo Project Report

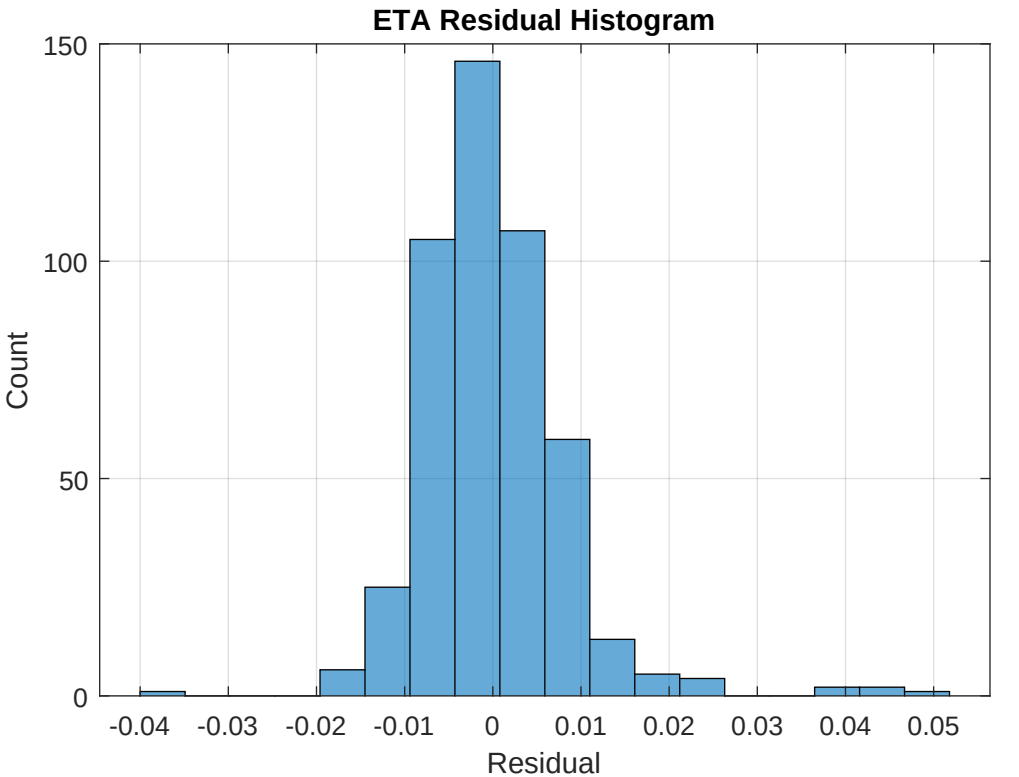
Model: turbo_model_v35.mat
ExtInput: input.mat
ExtOutput: output.mat
PredictFcn: predict_turbocompressor_model_v35
N=476, D=23, SpeedIdx=1
Generated: 08-Jan-2026 01:39:58

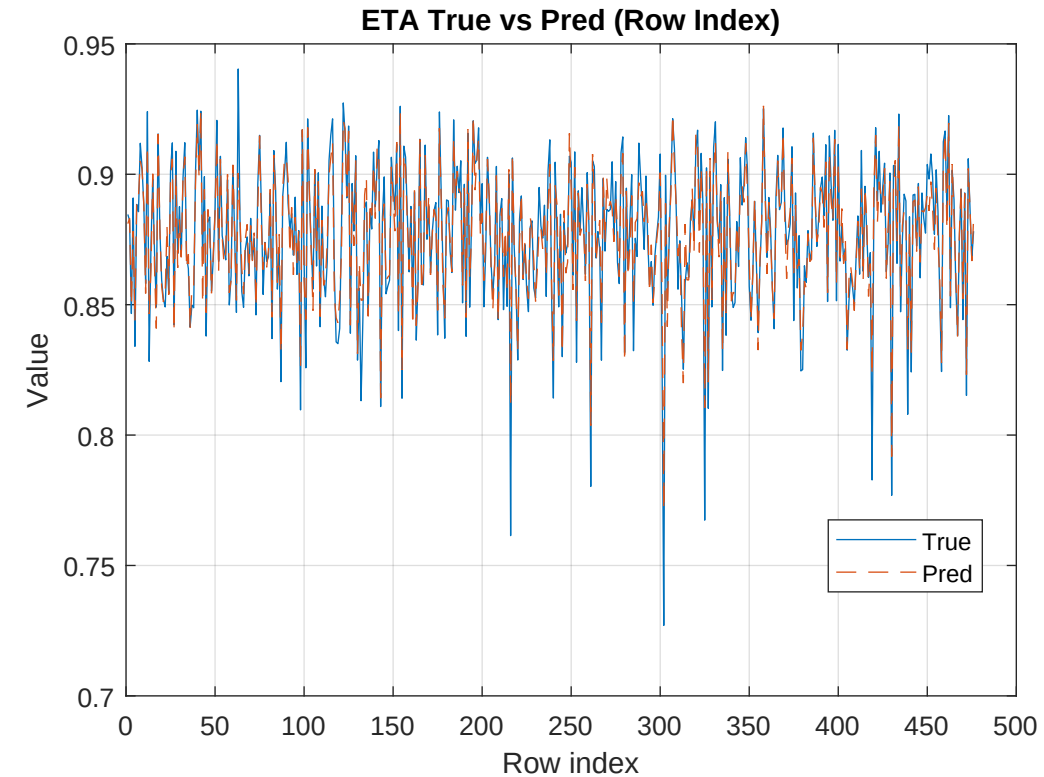
Metrics (RMSE / MAE / R2):

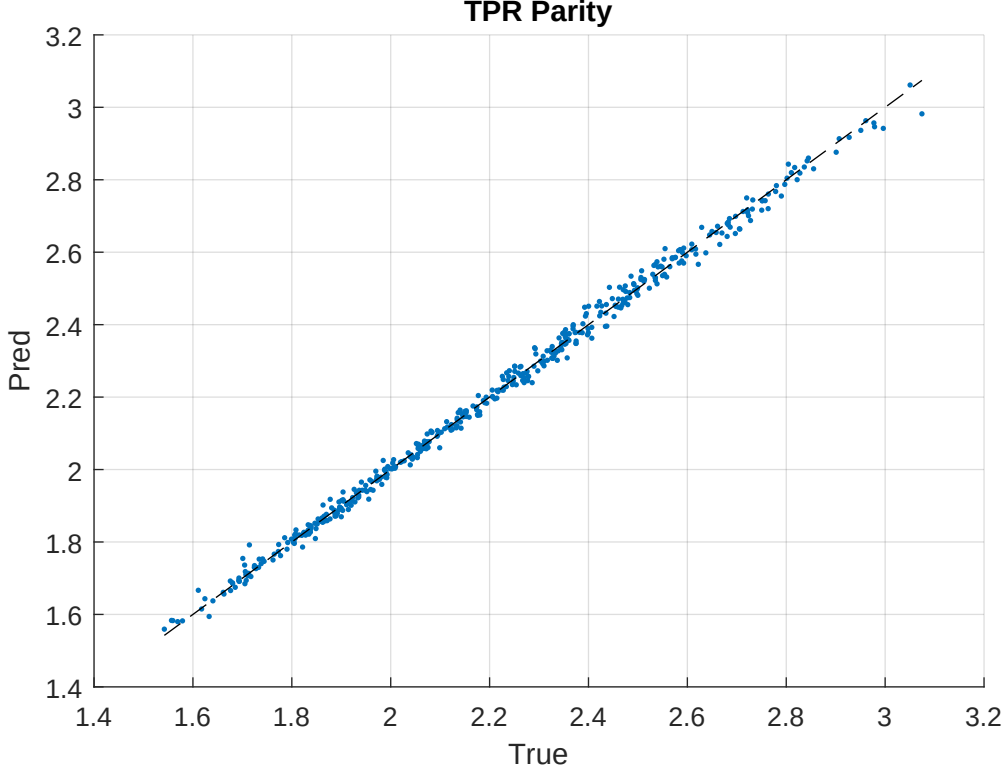
ETA	0.00826743	0.00575656	0.91599
TPR	0.019727	0.0146767	0.9965
ENT	0.50556	0.383182	0.965544
ALPHA2	0.400052	0.30684	0.994744
VTH2	0.003971	0.00301667	0.99434

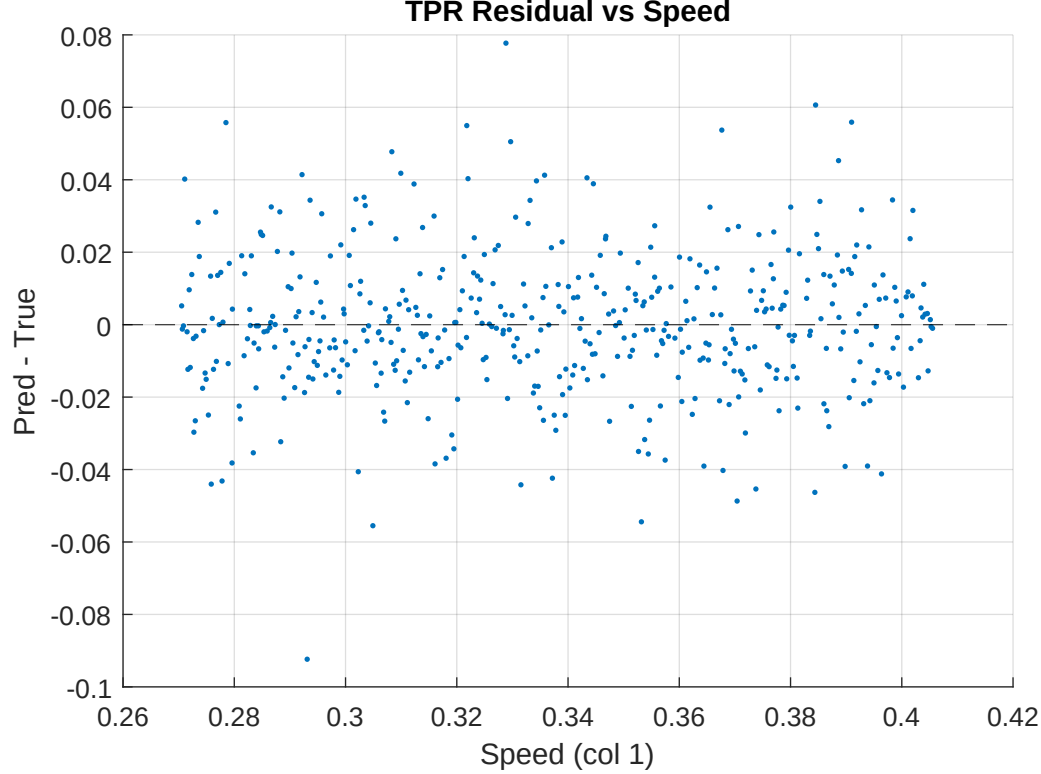

ETA Parity
Pred
True
0.95
0.9
0.85
0.8
0.75
0.7
0.7
0.75
0.8
0.85
0.9
0.95

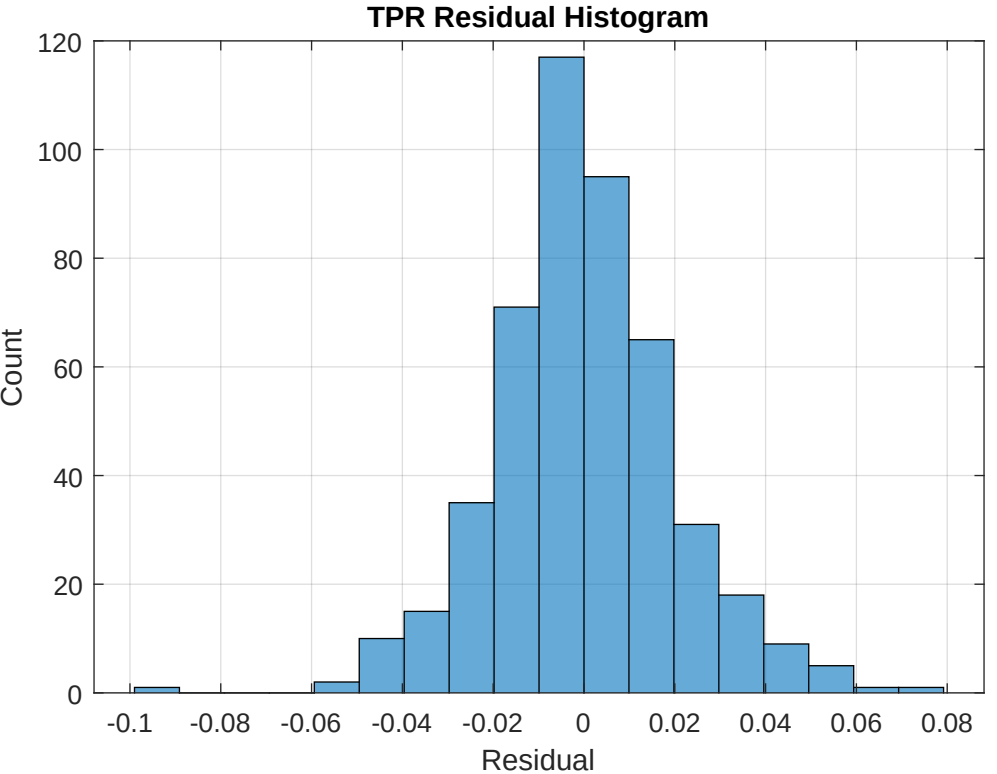

ETA Residual vs Speed
Pred - True
Speed (col 1)
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
0.26
0.28
0.3
0.32
0.34
0.36
0.38
0.4
0.42

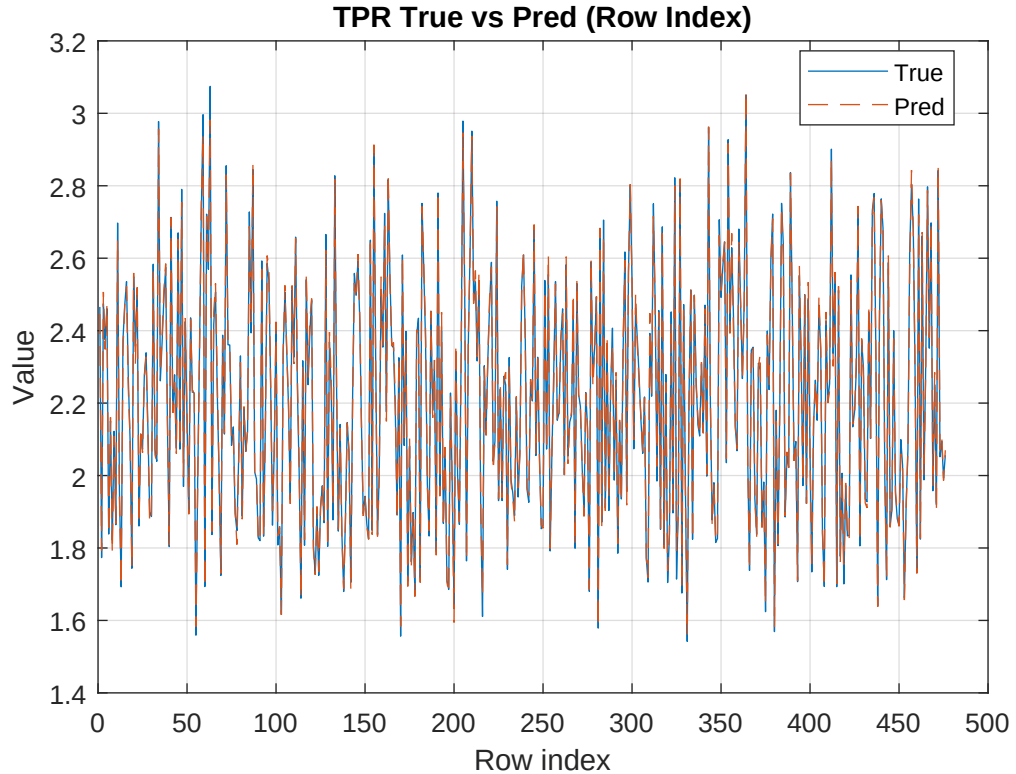

ETA Residual Histogram
Count
Residual
150
100
50
0
-0.04
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
0.04
0.05

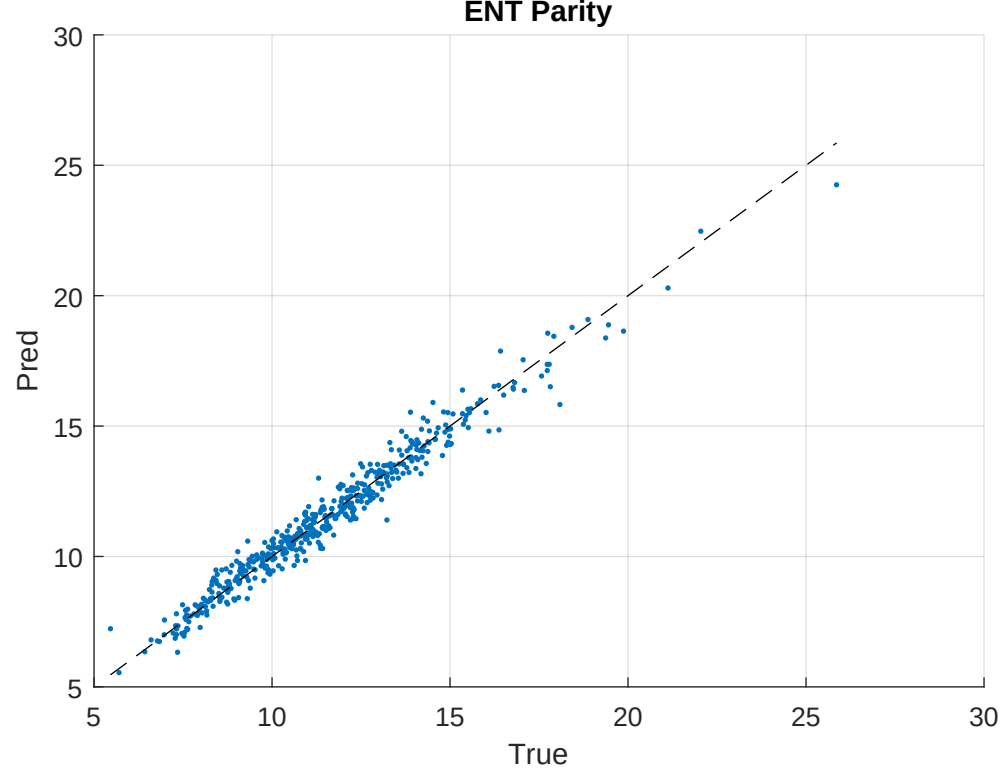

ETA True vs Pred (Row Index)
Value
Row index
True
Pred
0.95
0.9
0.85
0.8
0.75
0.7
0
50
100
150
200
250
300
350
400
450
500

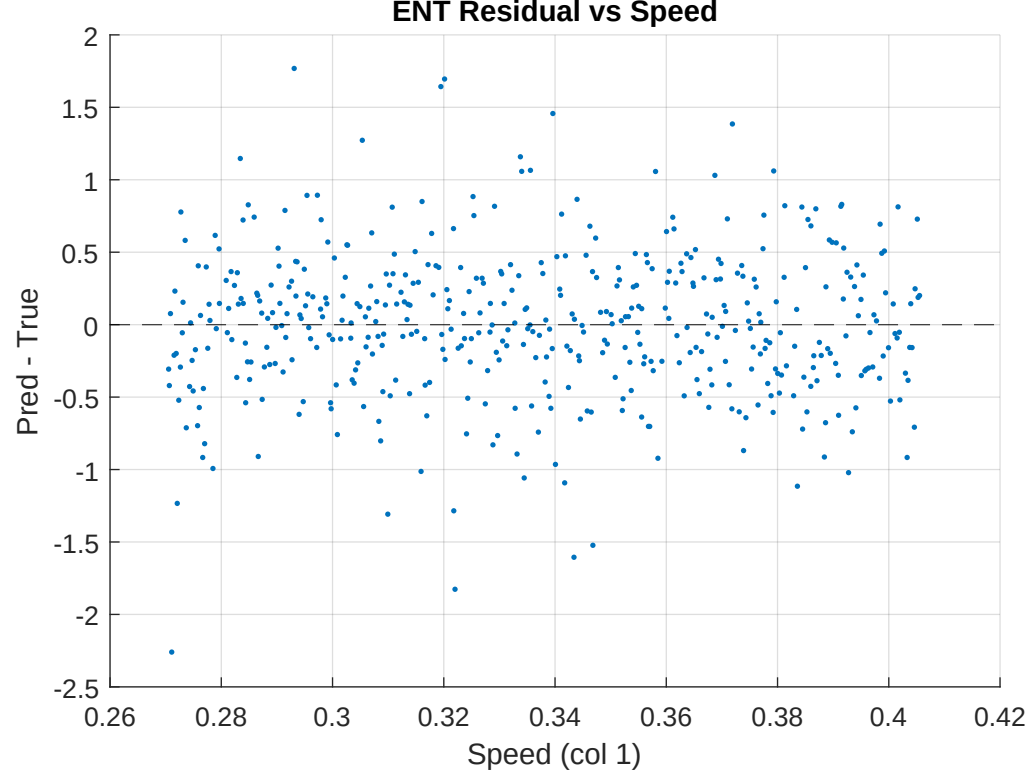

TPR Parity
Pred
True
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
3.2

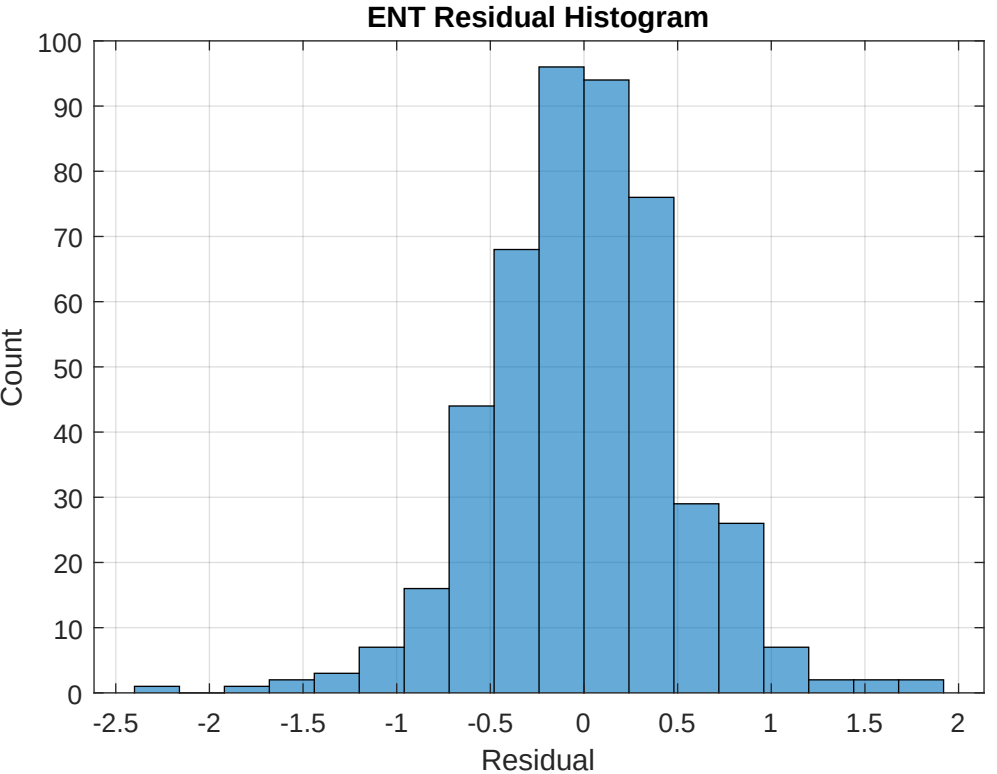

TPR Residual vs Speed
Pred - True
Speed (col 1)
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.26
0.28
0.3
0.32
0.34
0.36
0.38
0.4
0.42

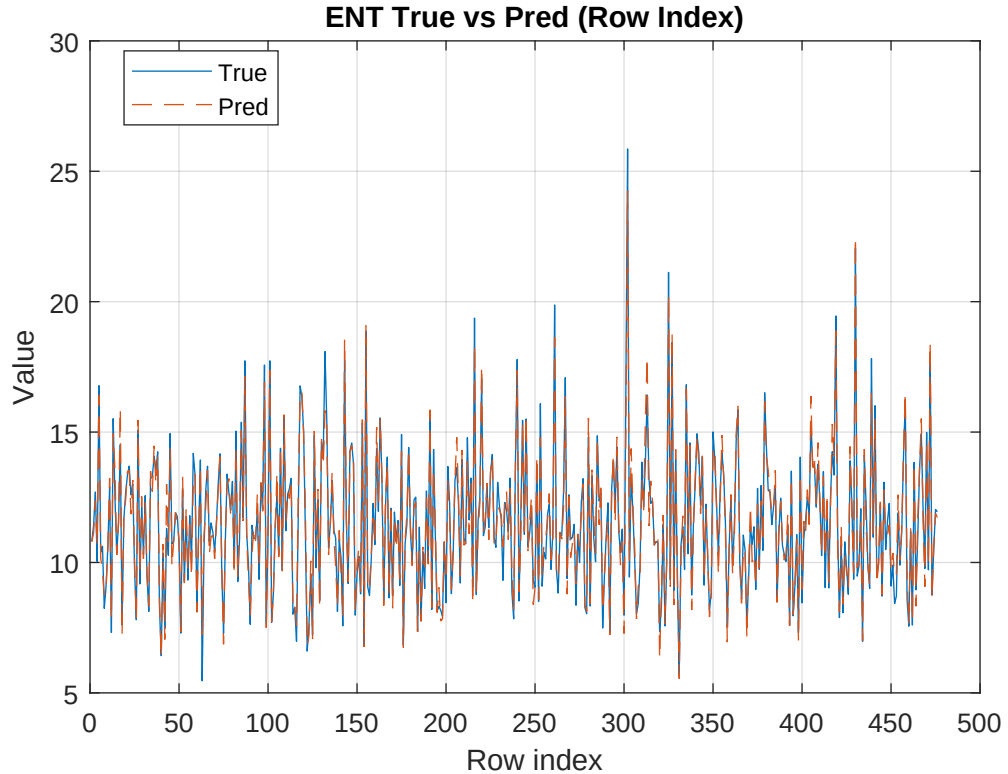

TPR Residual Histogram
Count
Residual
120
100
80
60
40
20
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08

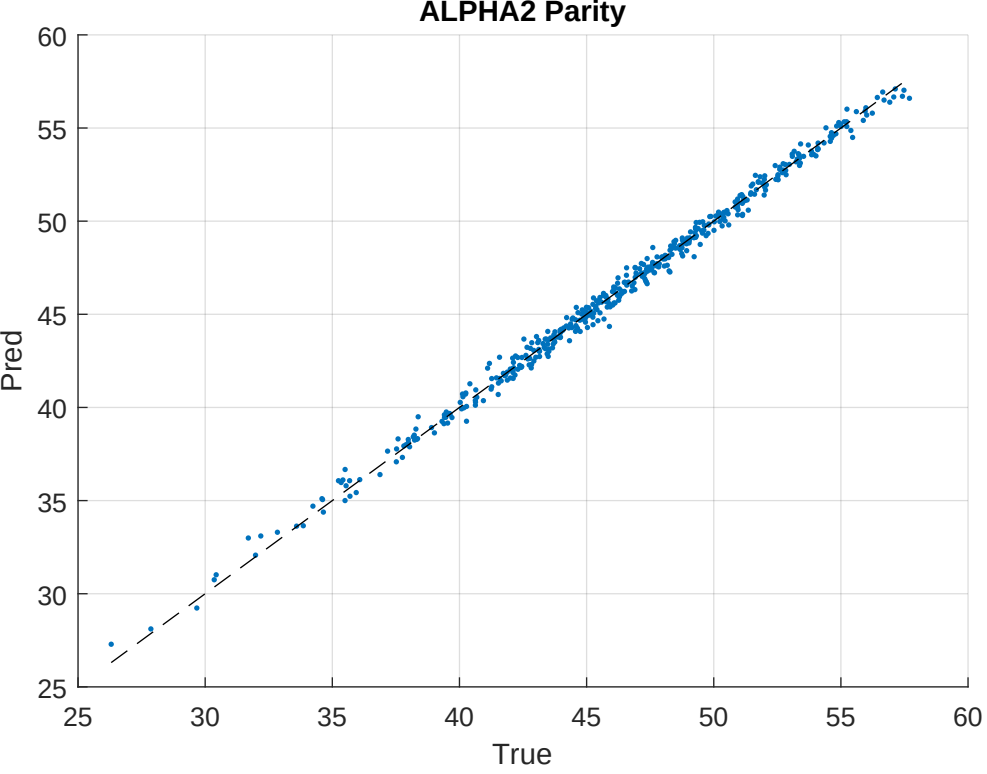

TPR True vs Pred (Row Index)
Value
Row index
True
Pred
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
0
50
100
150
200
250
300
350
400
450
500

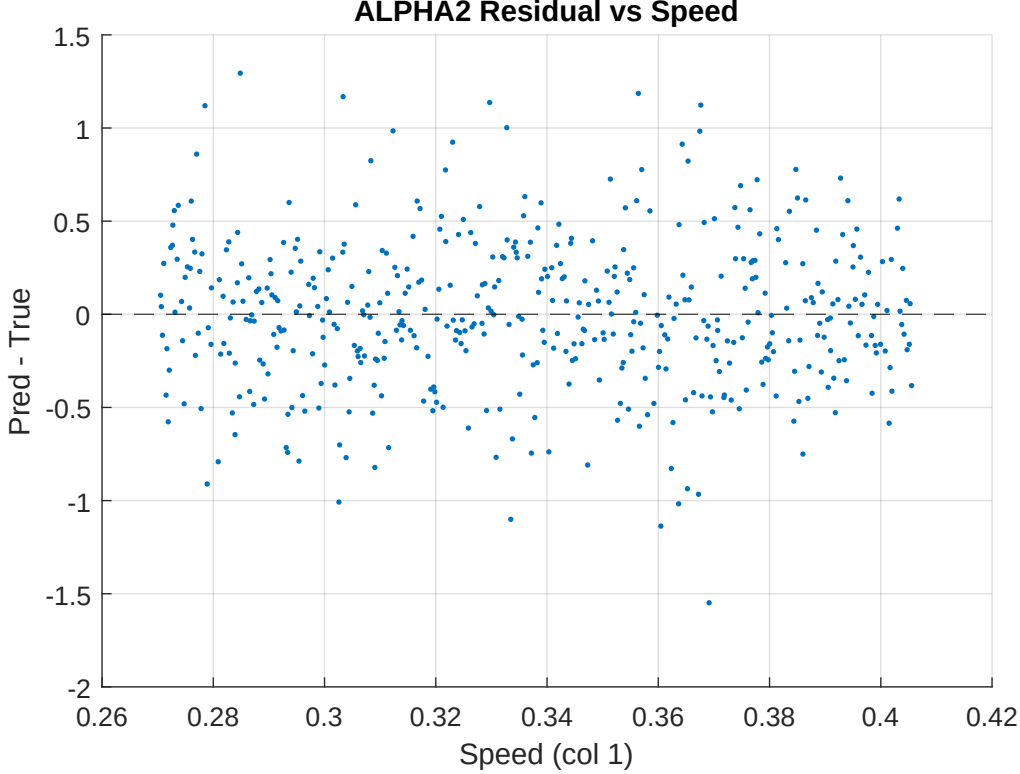

ENT Parity
Pred
True
30
25
20
15
10
5
5
10
15
20
25
30

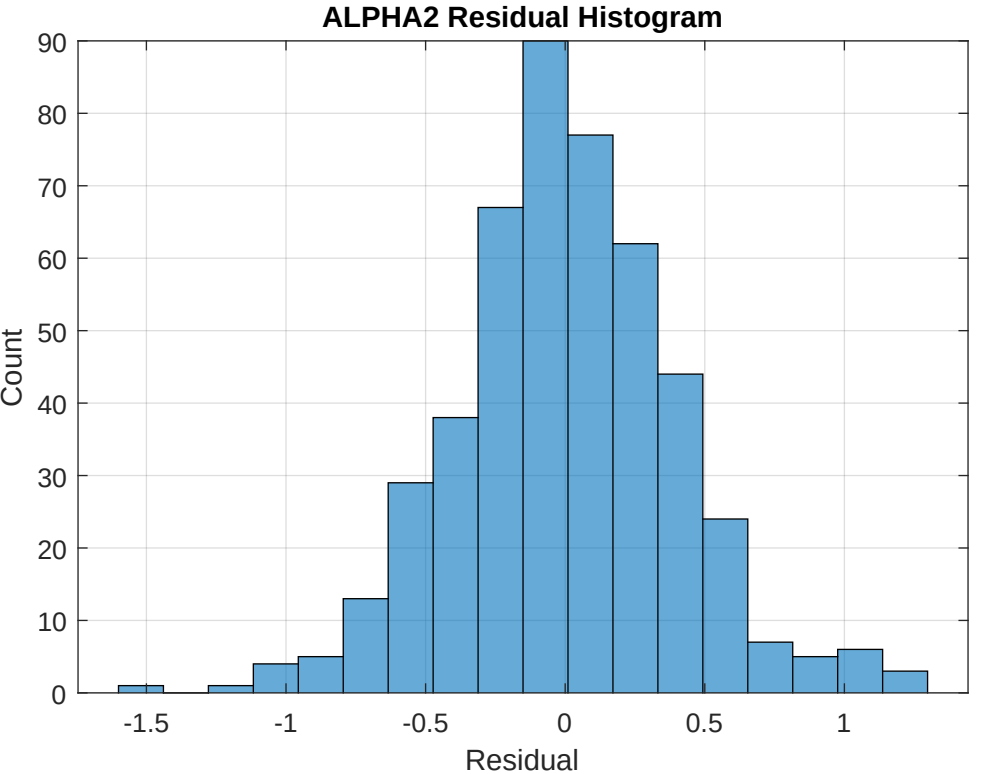

ENT Residual vs Speed
Pred - True
Speed (col 1)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0.26
0.28
0.3
0.32
0.34
0.36
0.38
0.4
0.42

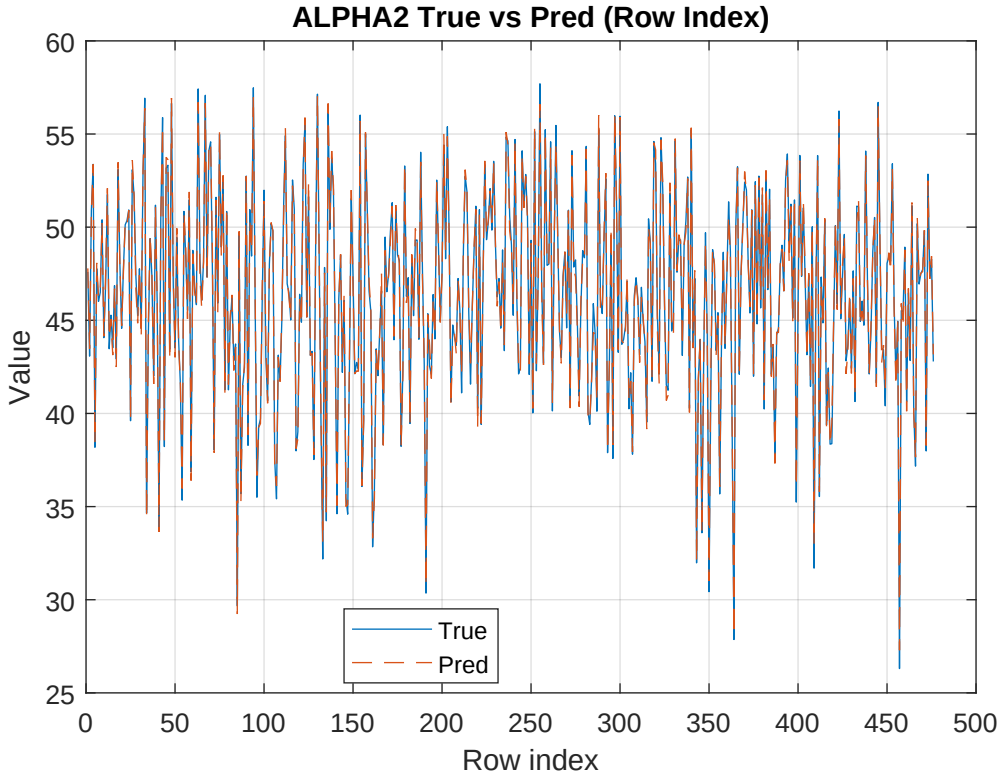

ENT Residual Histogram
Count
Residual
100
90
80
70
60
50
40
30
20
10
0
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

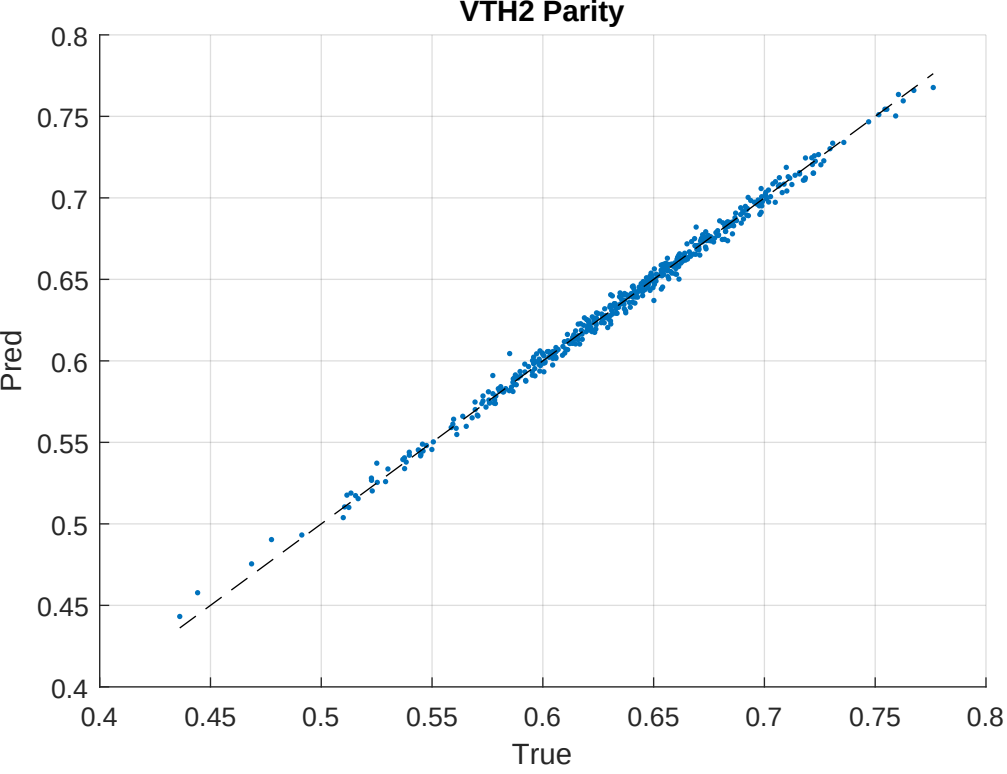

ENT True vs Pred (Row Index)
True
Pred
Value
Row index
30
25
20
15
10
5
0
50
100
150
200
250
300
350
400
450
500

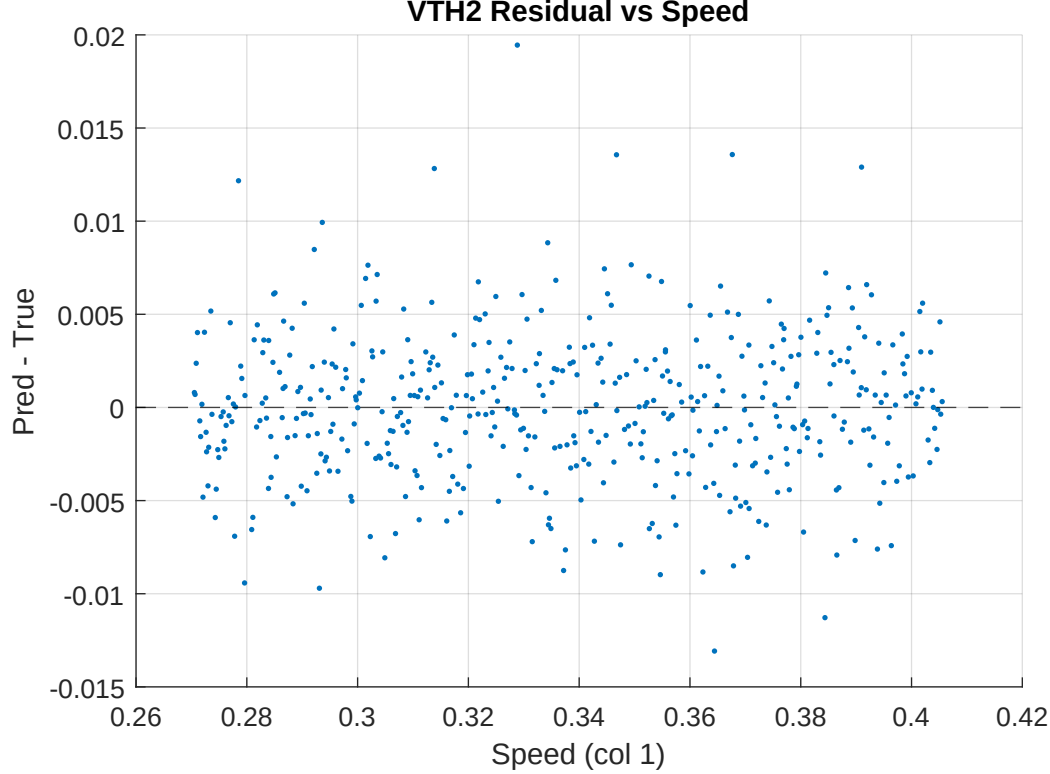

ALPHA2 Parity
Pred
True
60
55
50
45
40
35
30
25
25
30
35
40
45
50
55
60

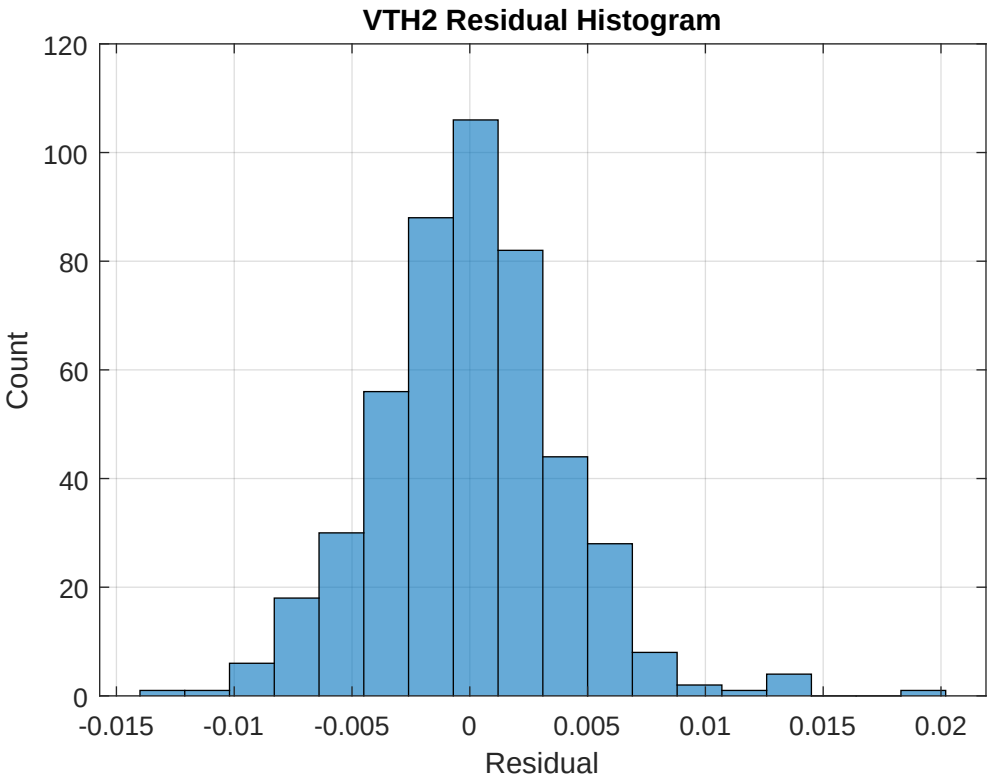

ALPHA2 Residual vs Speed
Pred - True
Speed (col 1)
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0.26
0.28
0.3
0.32
0.34
0.36
0.38
0.4
0.42

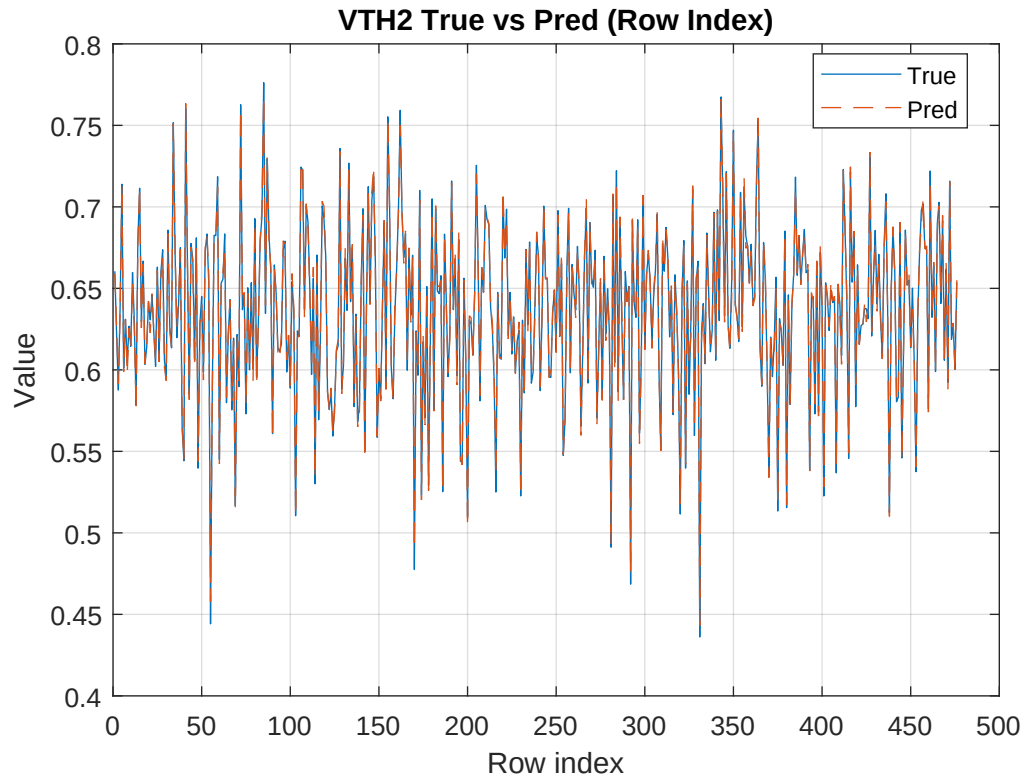
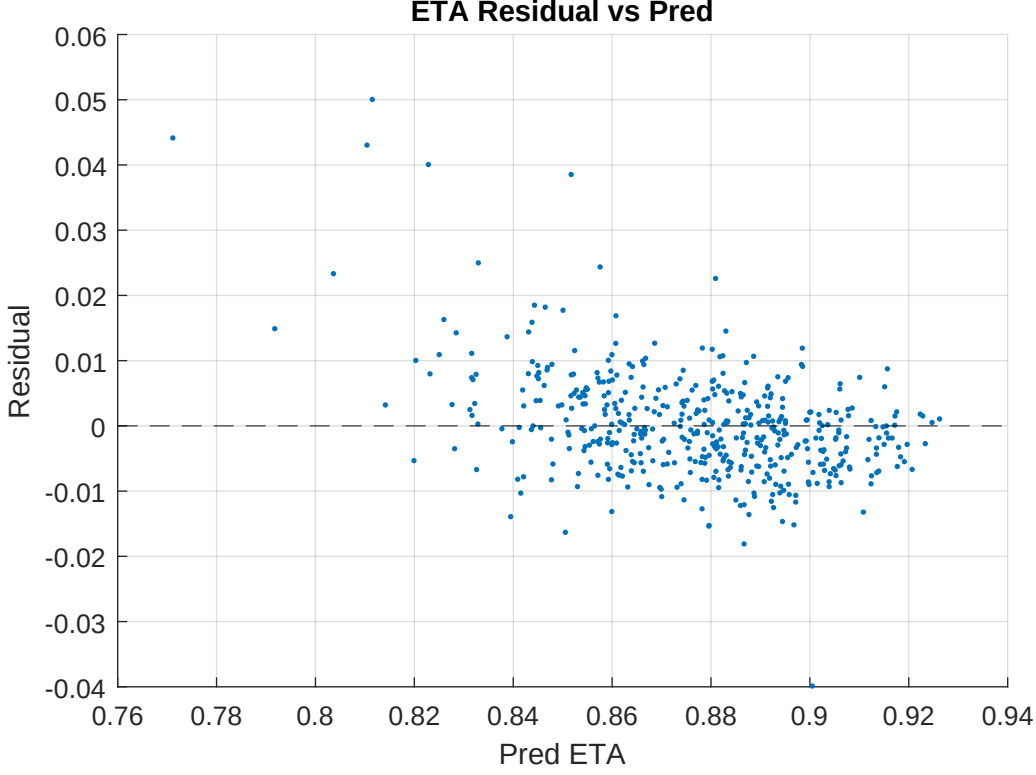
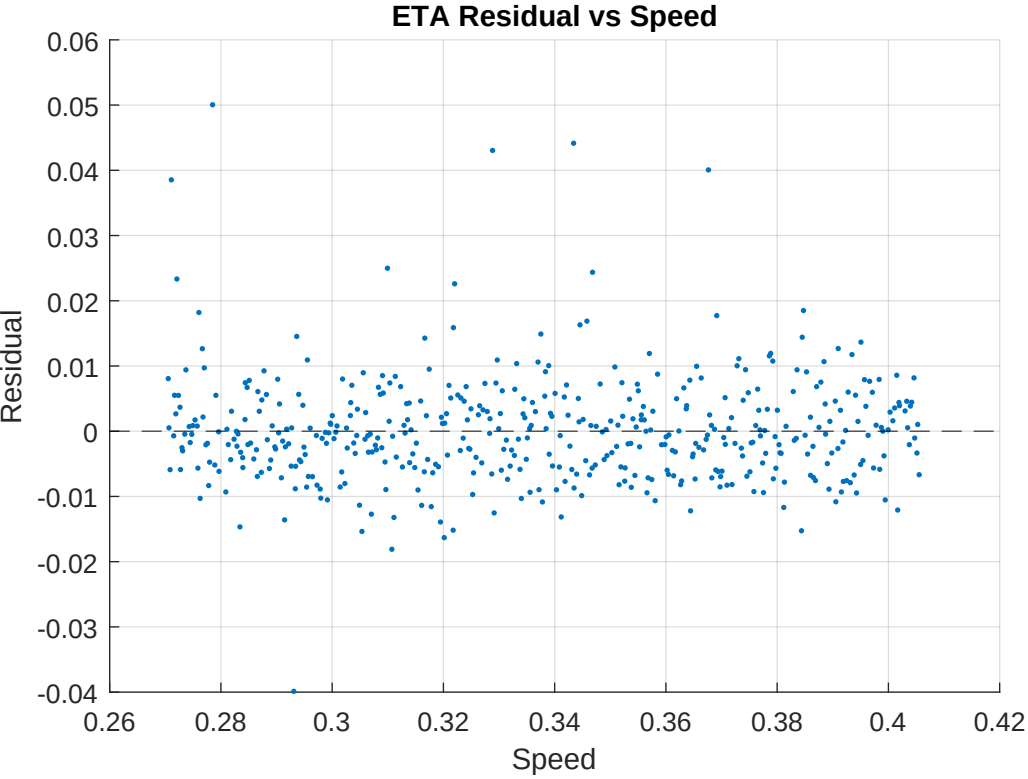
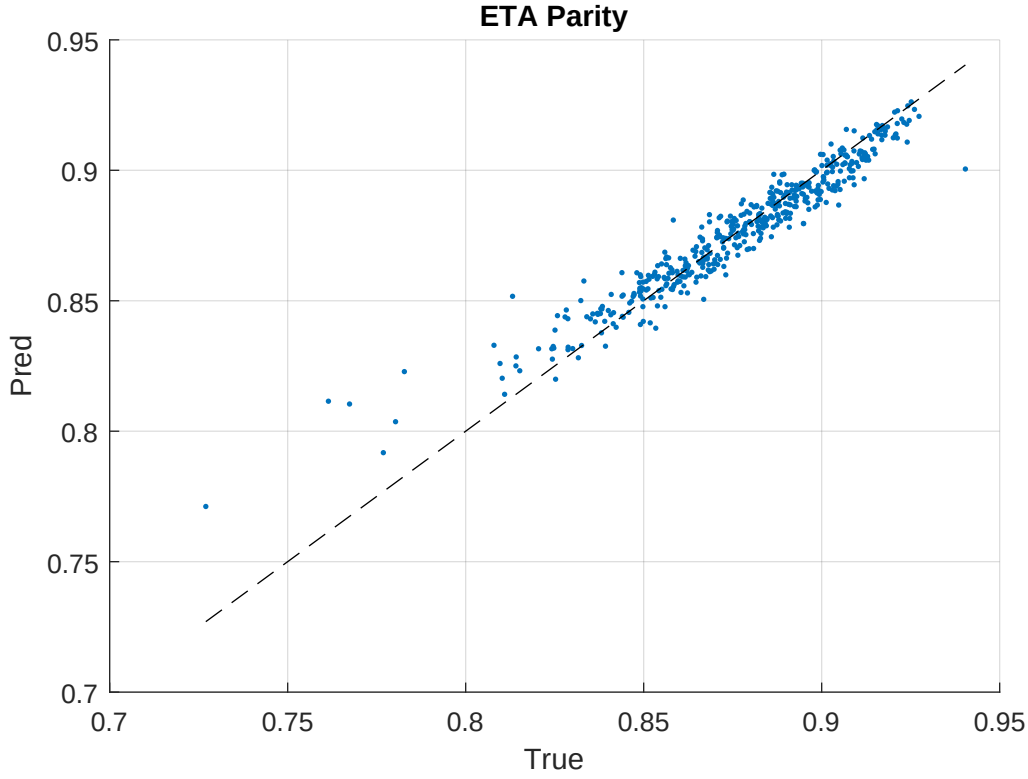

ALPHA2 Residual Histogram
Count
Residual
90
80
70
60
50
40
30
20
10
0
-1.5
-1
-0.5
0
0.5
1


ALPHA2 True vs Pred (Row Index)
Value
Row index
True
Pred
60
55
50
45
40
35
30
25
0
50
100
150
200
250
300
350
400
450
500


VTH2 Parity
Pred
True
0.4
0.45
0.5
0.55
0.6
0.65
0.7
0.75
0.8


VTH2 Residual vs Speed
Pred - True
Speed (col 1)
0.02
0.015
0.01
0.005
0
-0.005
-0.01
-0.015
0.26
0.28
0.3
0.32
0.34
0.36
0.38
0.4
0.42


VTH2 Residual Histogram
Count
Residual
120
100
80
60
40
20
0
-0.015
-0.01
-0.005
0
0.005
0.01
0.015
0.02


VTH2 True vs Pred (Row Index)
Value
Row index
True
Pred
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0
50
100
150
200
250
300
350
400
450
500

ETA bin table not available