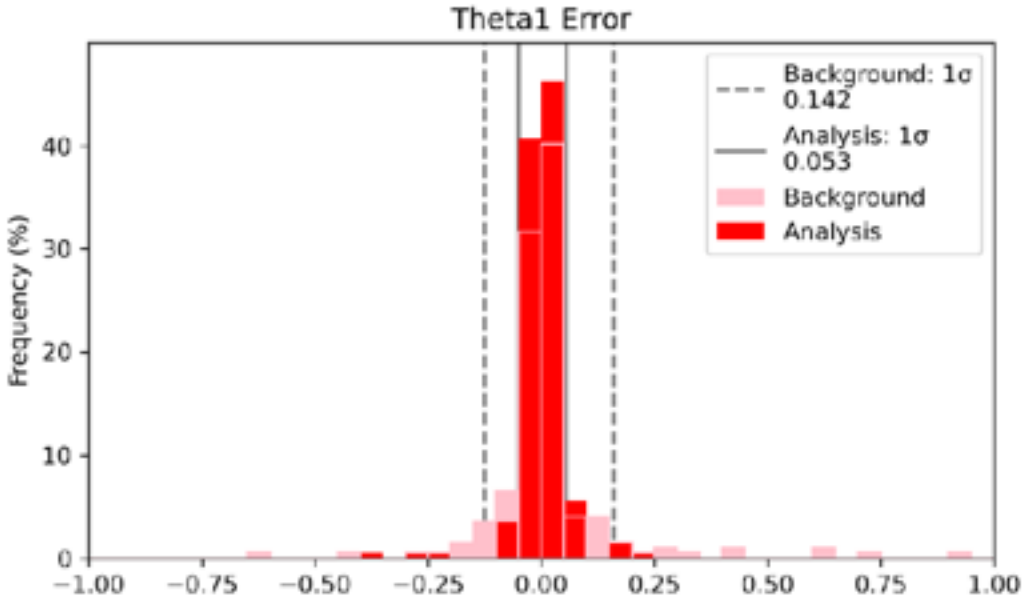
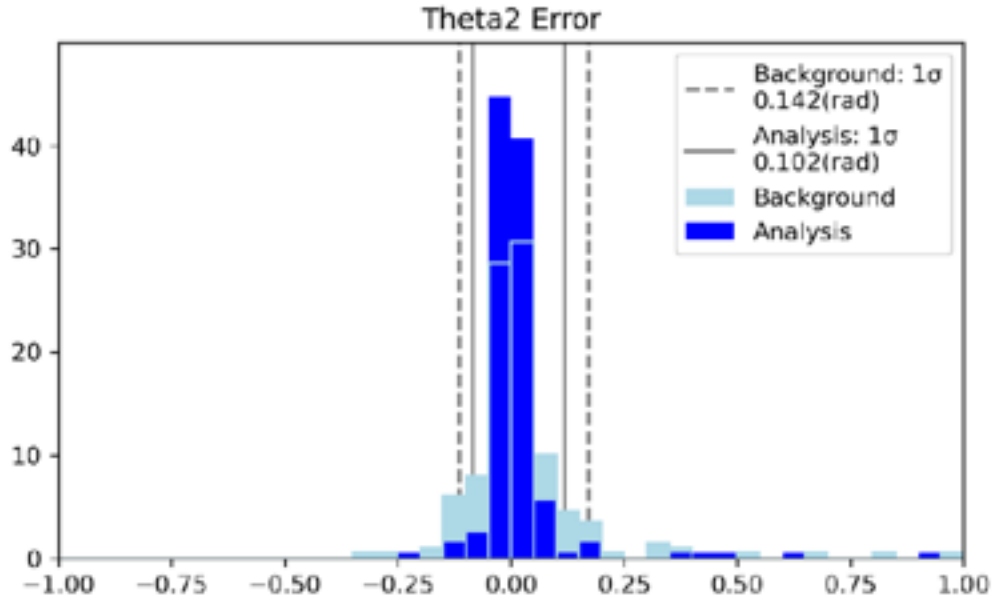
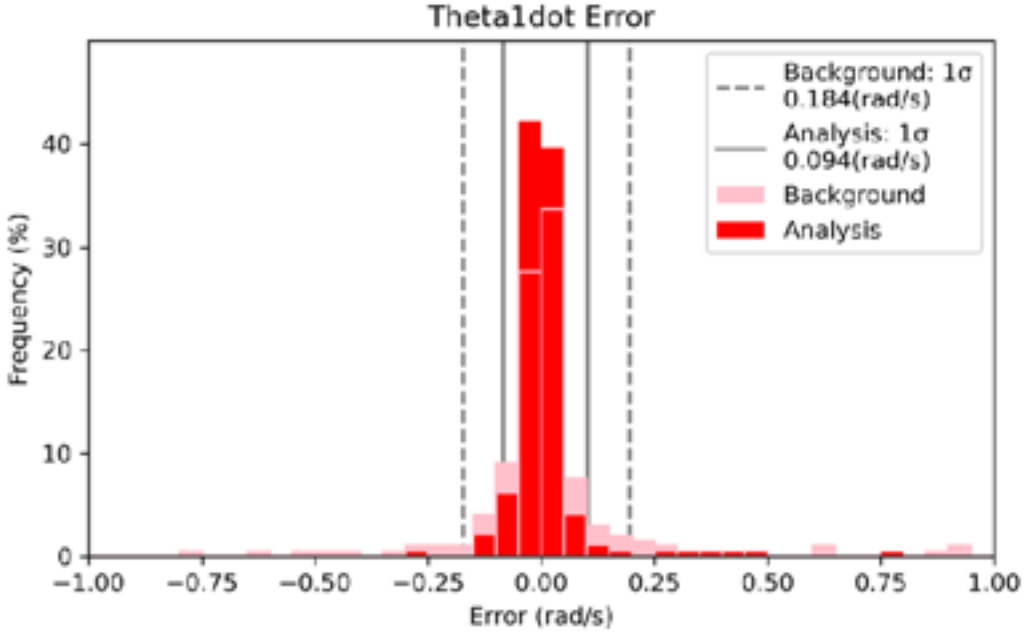
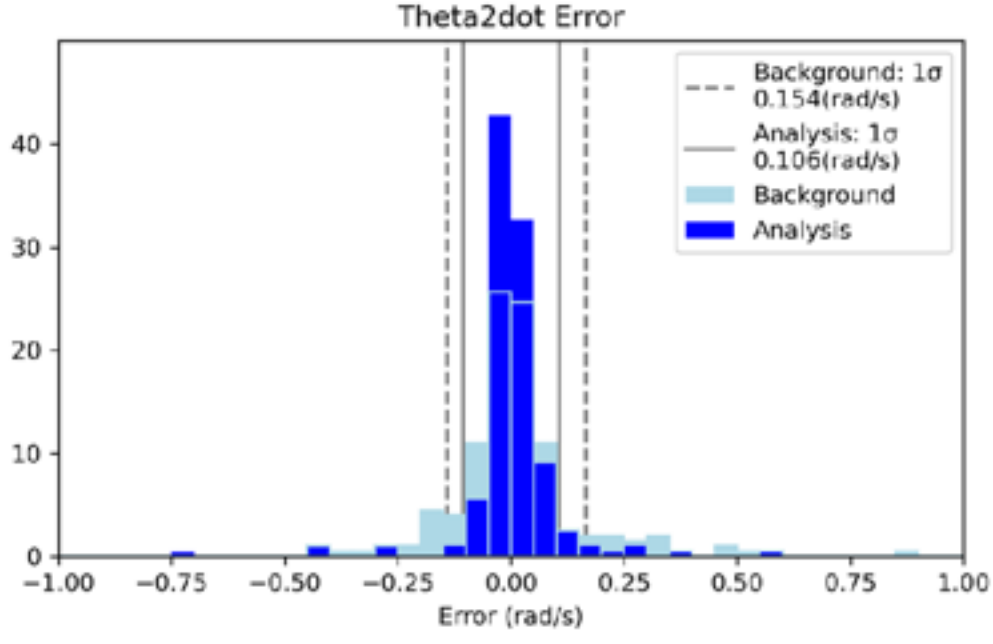
Experiment 4: Analysis vs Background

Remove Outliers: [-1, 1]

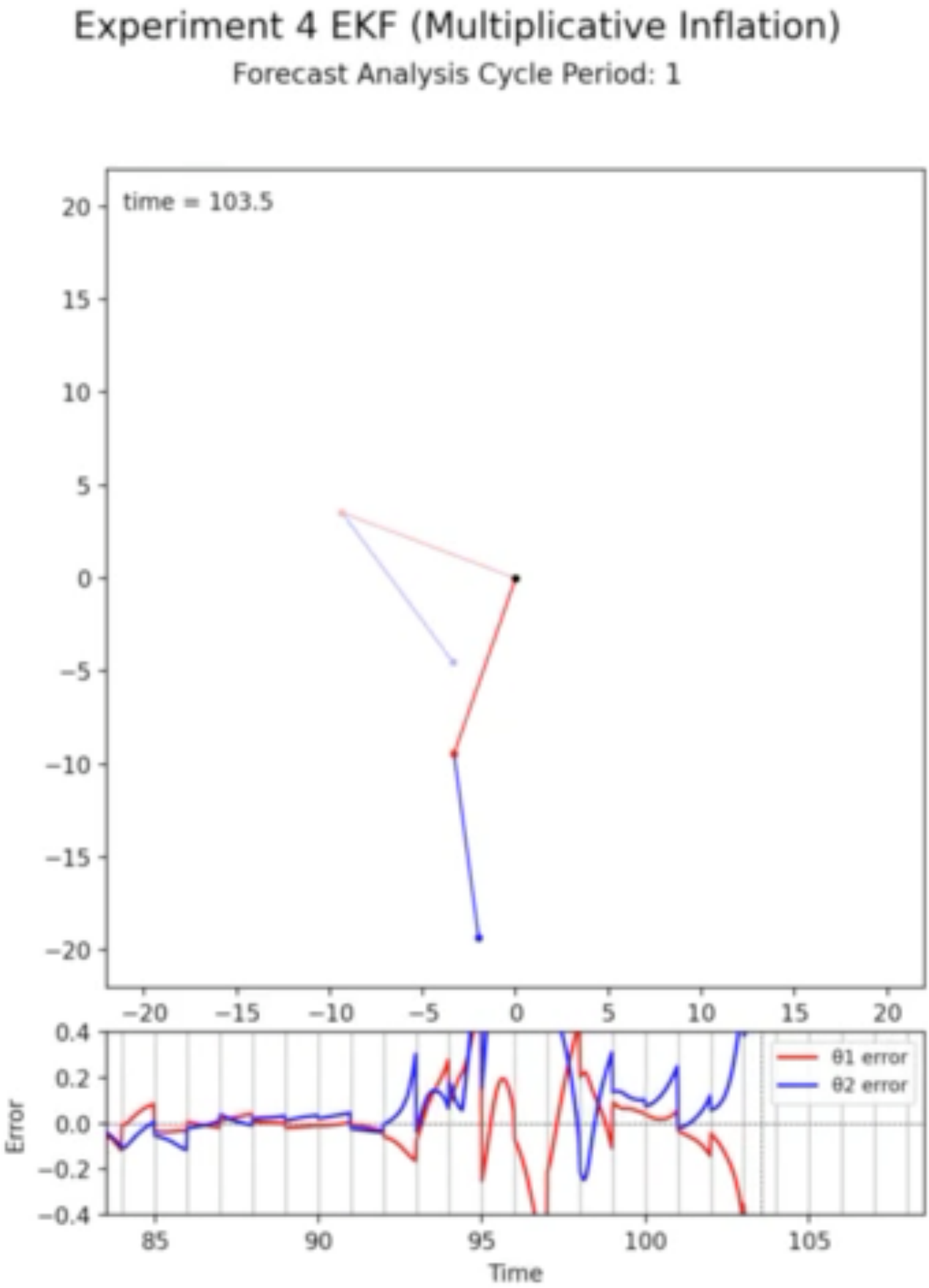








Experiment


Experiment 4 EKF (Multiplicative Inflation)
Forecast Analysis Cycle Period: 1
time = 103.5
20
15
10
5
0
−5
−10
−15
−20
−20
−15
−10
−5
0
5
10
15
20
0.4
0.2
0.0
−0.2
−0.4
Error
θ1 error
θ2 error
85
90
95
100
105
Time

θ_1分析標準差：~~0.036~~0.053 (rad)

$\dot{\theta}_1$分析標準差：~~0.048~~0.094 (rad/s)

θ_2分析標準差：~~0.036~~0.102 (rad)

$\dot{\theta}_2$分析標準差：~~0.048~~0.106 (rad/s)

註：初始的$\mathbf{B} = \mathbf{R}$，倍數為 1.5，經多次嘗試 1.5 倍能獲得最佳結果。

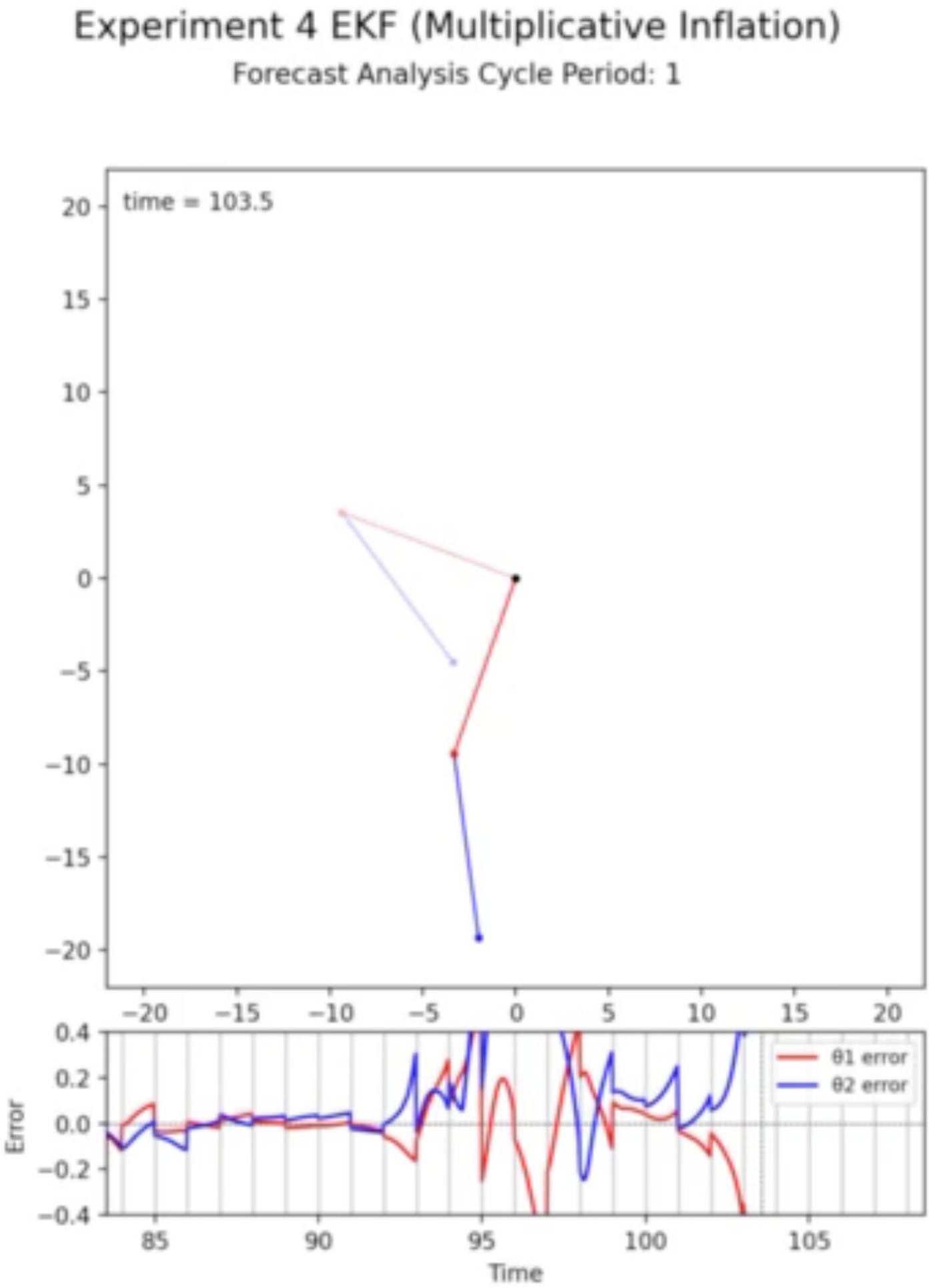
分析誤差相較於**背景誤差**改變了多少？

此實驗相較於觀測即分析時

註：離群值不納入統計

(異常的離群值在model spin up時被修正)

Experiment 4: EKF - Multiplicative Inflation （將$\mathbf{B}$乘以固定倍數）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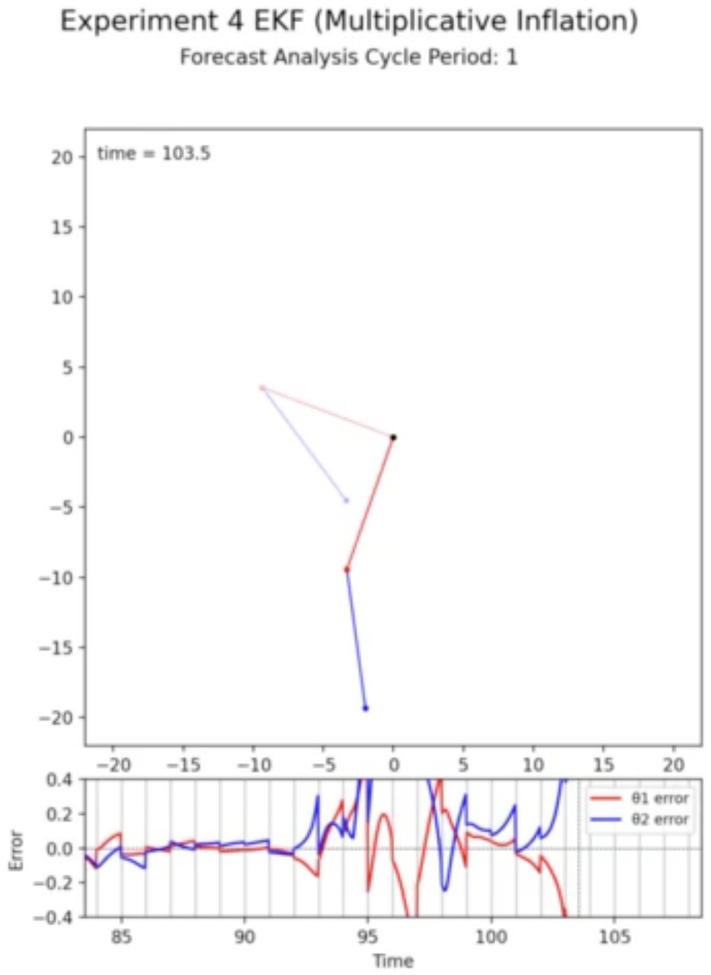
Experiment

Experiment 4: EKF - Multiplicative Inflation （將**B**乘以固定倍數）



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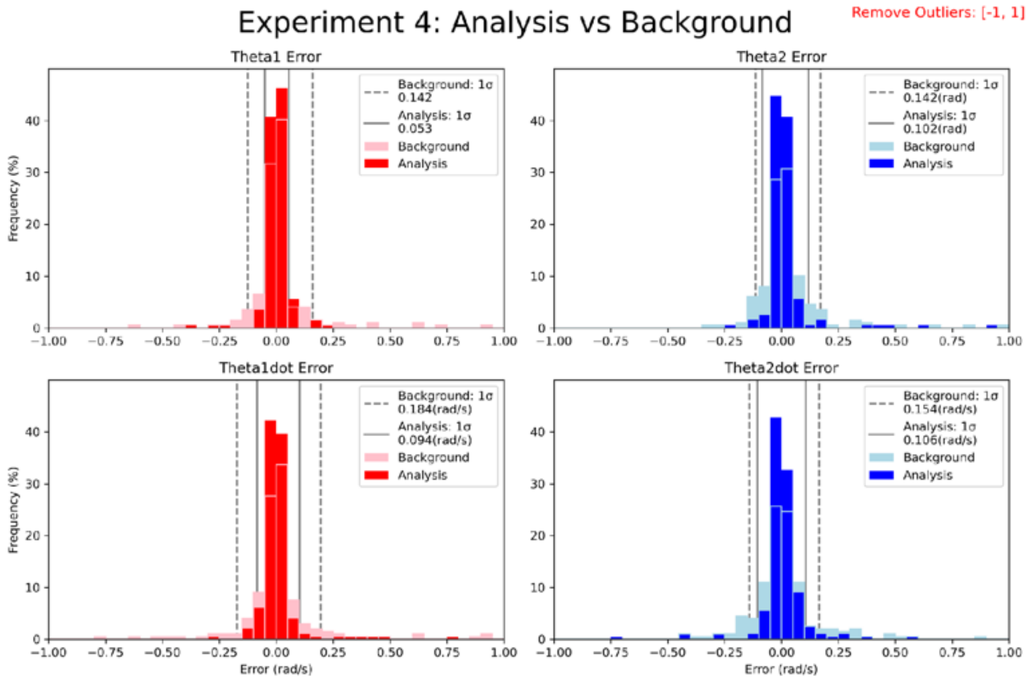
分析誤差相較於**背景誤差**改變了多少？



此實驗相較於**觀測即分析**時

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Experiment

Experiment 4: EKF - Multiplicative Inflation （將$\mathbf{B}$乘以固定倍數）

雖然背景值值得相信，
但背景跟觀測差異很大時，
我們該相信觀測。