Technical Analysis & Diagnostics

Detailed Engineering Report | Run ID: 20251208_145702

1. Comprehensive Model Evaluation

Detailed breakdown of model performance across Validation and Test sets.

Metric	Validation Set	Test Set	Delta
CMAE (°)	0.8142	1.5171	+0.7029
CRMSE (°)	3.7994	9.0620	+5.2625
Max Error (°)	46.0499	132.3256	+86.2757
Acc @ 5° (%)	95.1157	94.6015	-0.5141
Acc @ 10° (%)	98.2005	97.4293	-0.7712

2. Hyperparameter Optimization Analysis

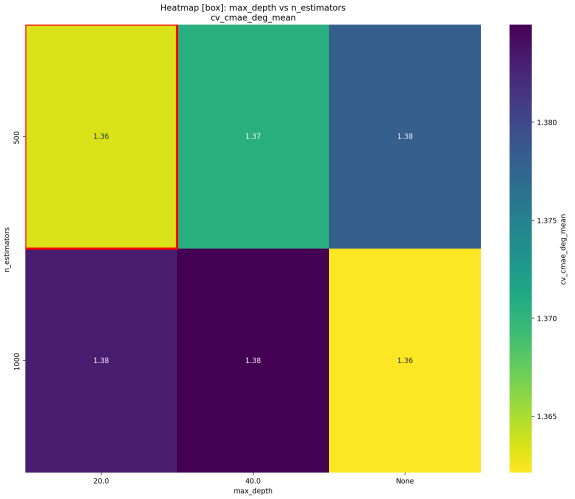
Optimal Parameters: Summary

Parameter	Type	Optimal Values	Best Value	Optimal Min	Optimal Max
max_depth	Categorical	20.0	20	N/A	N/A
n_estimators	Numeric	N/A	500	500.0	500.0

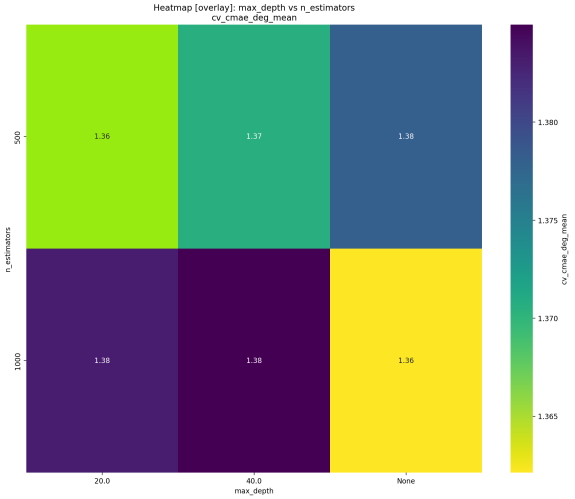
Optimal Parameters: ExtraTreesRegressor

Parameter	Type	Optimal Values	Best Value	Optimal Min	Optimal Max
max_depth	Categorical	20.0	20	N/A	N/A
n_estimators	Numeric	N/A	500	500.0	500.0

Parameter Landscape Visualizations



Max Depth Vs N Estimators



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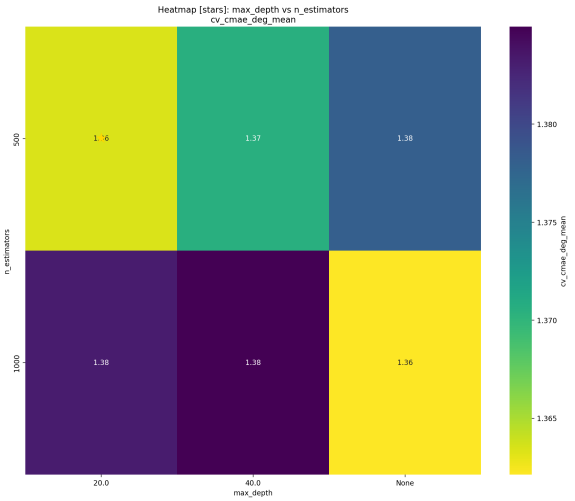

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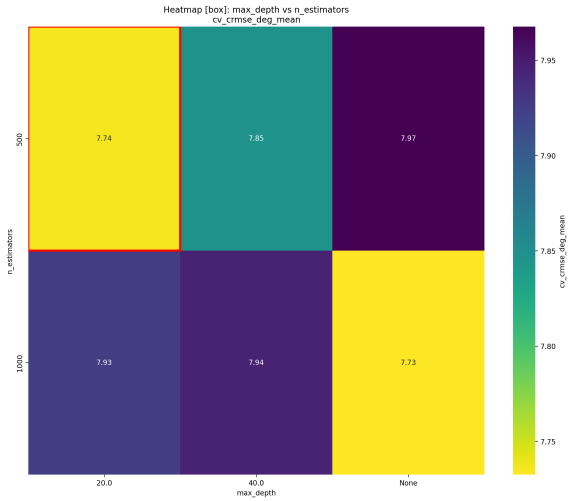

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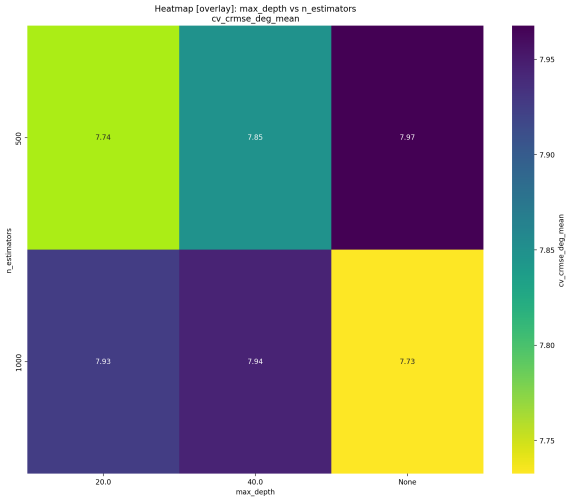

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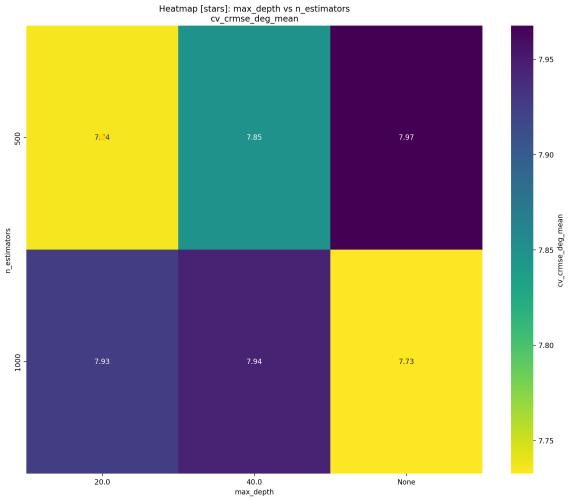

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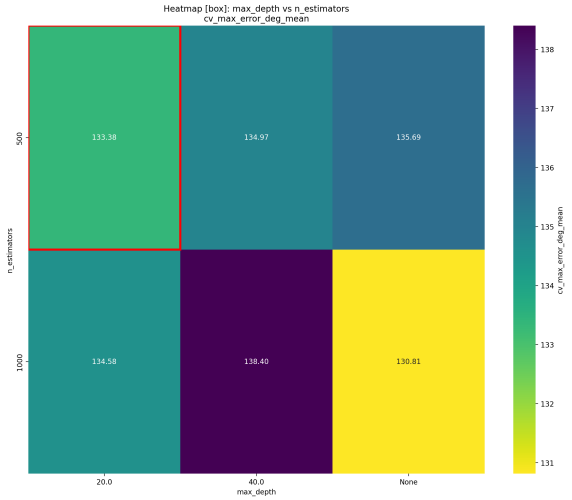

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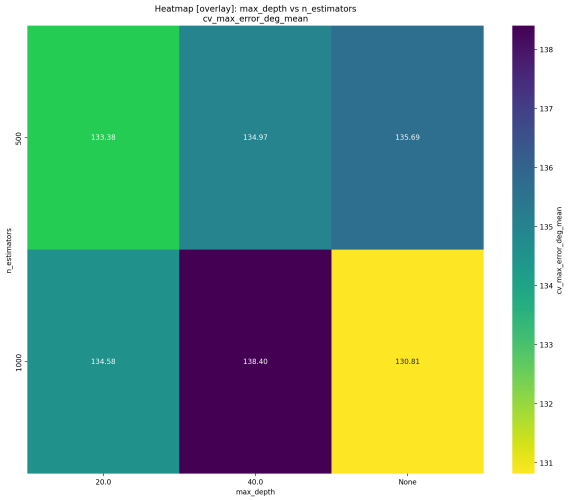

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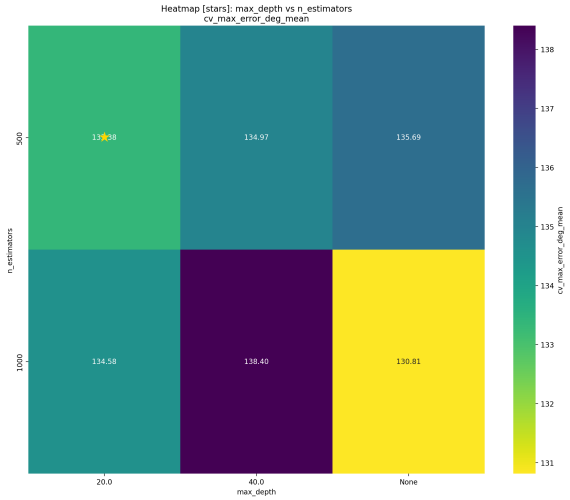

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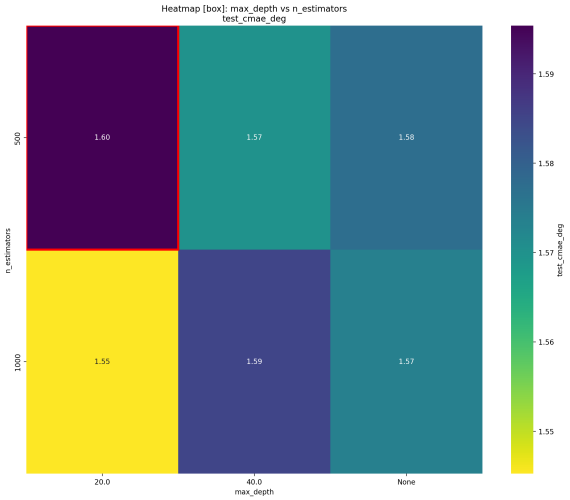

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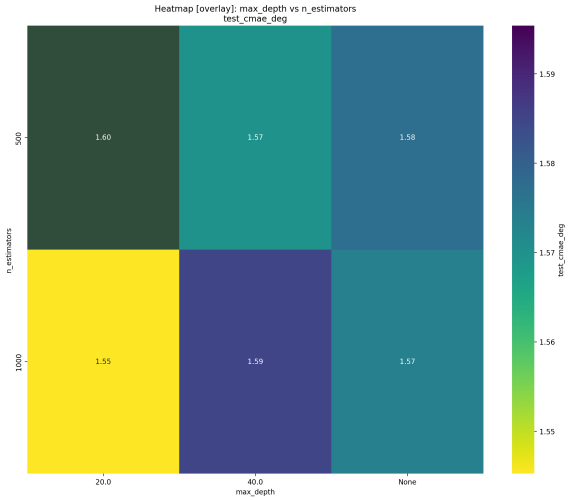

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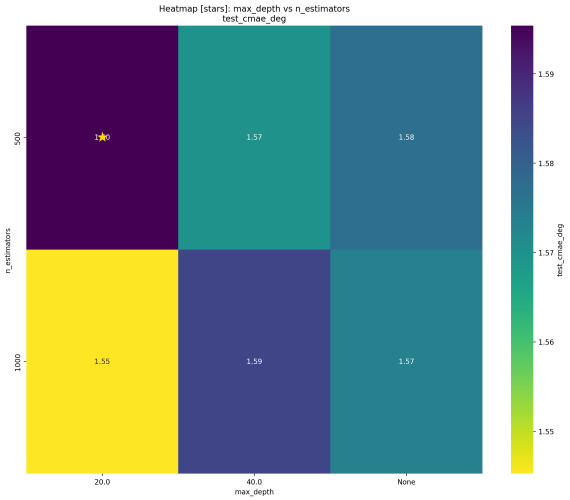

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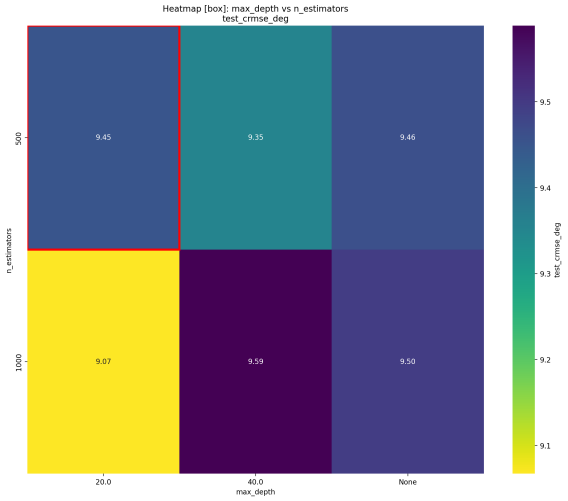

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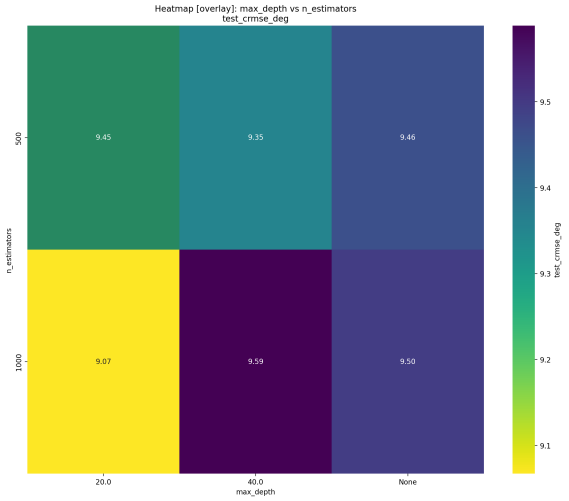

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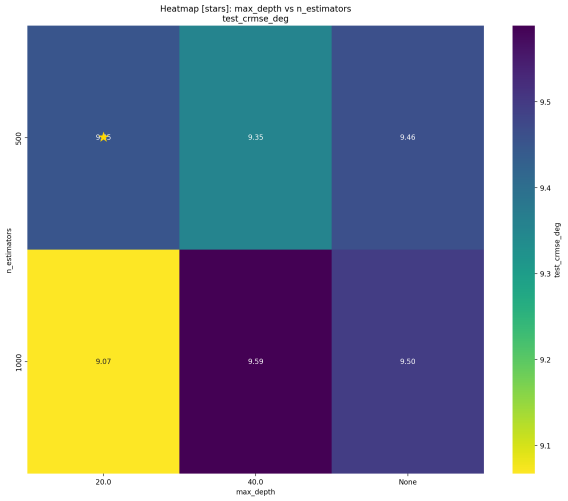

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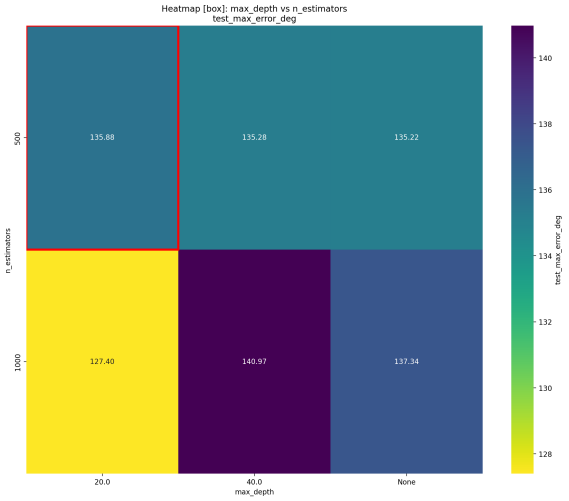

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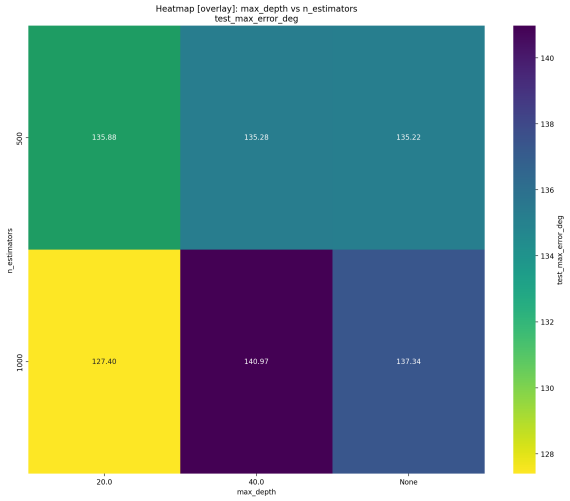

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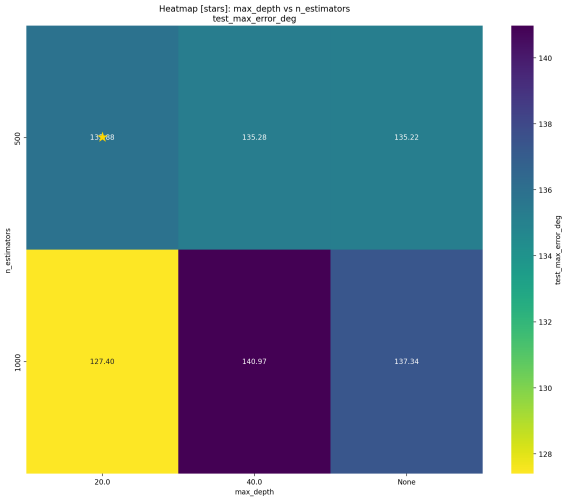

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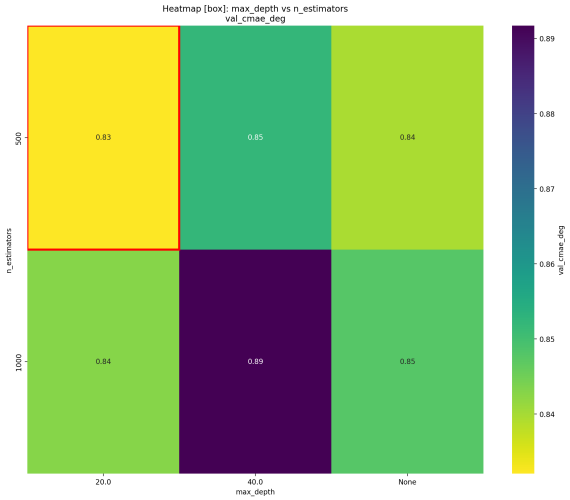

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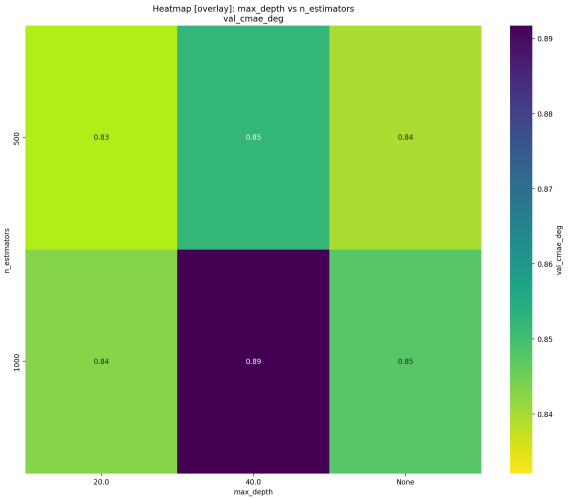

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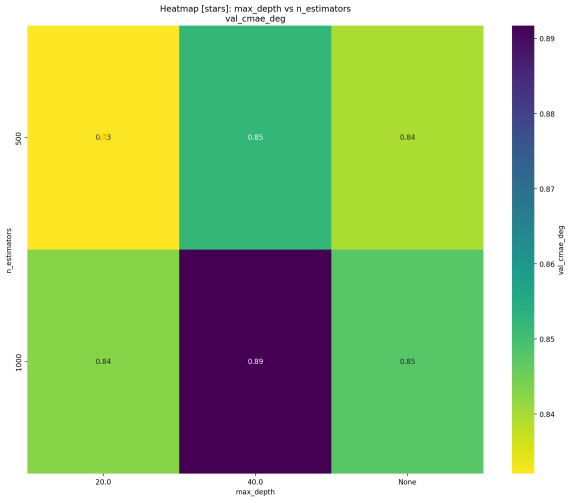

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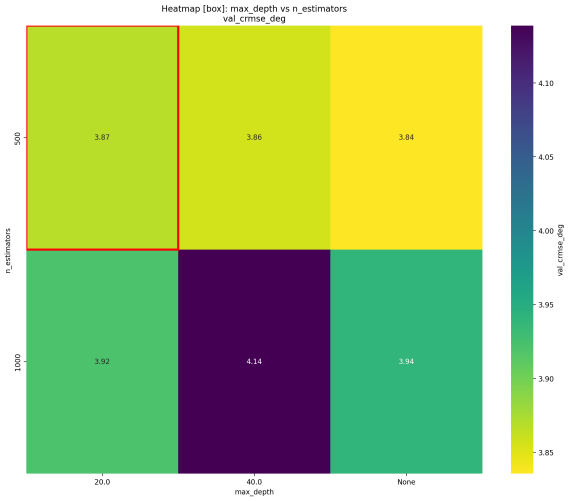

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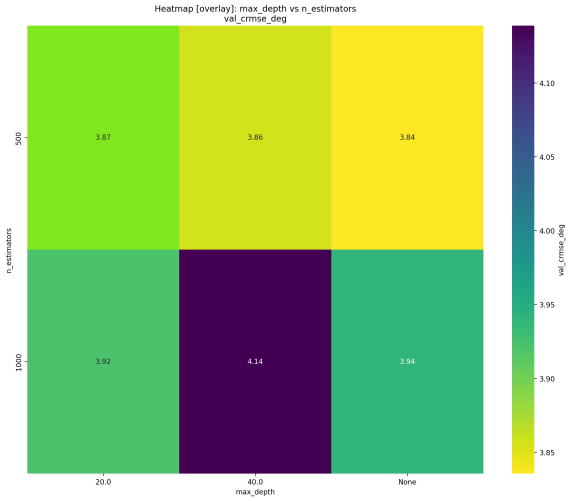

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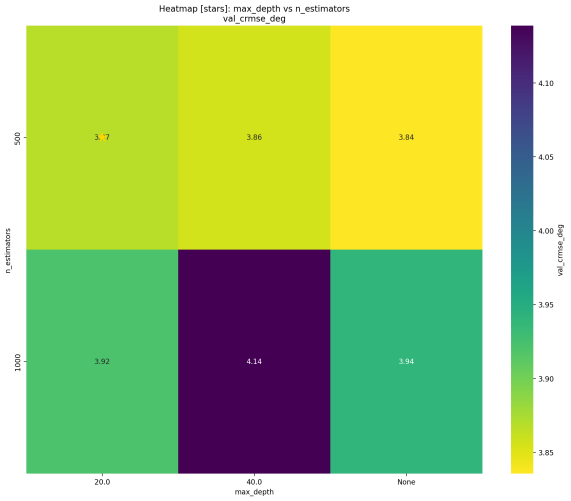

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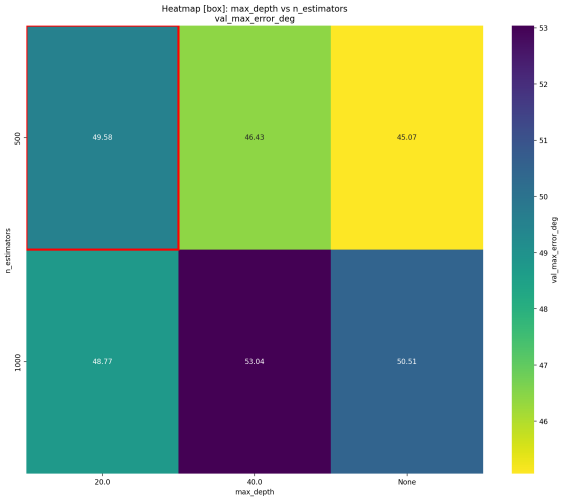

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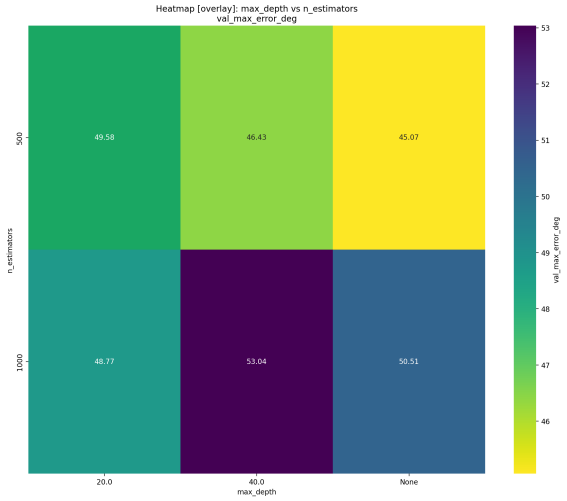

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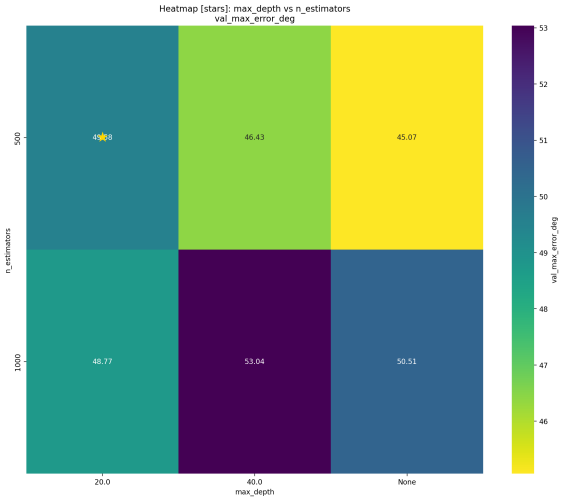
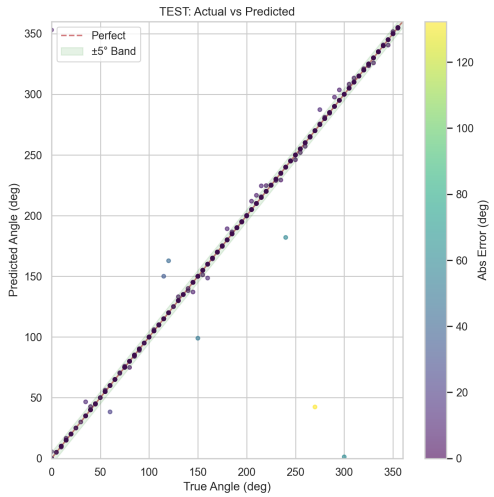


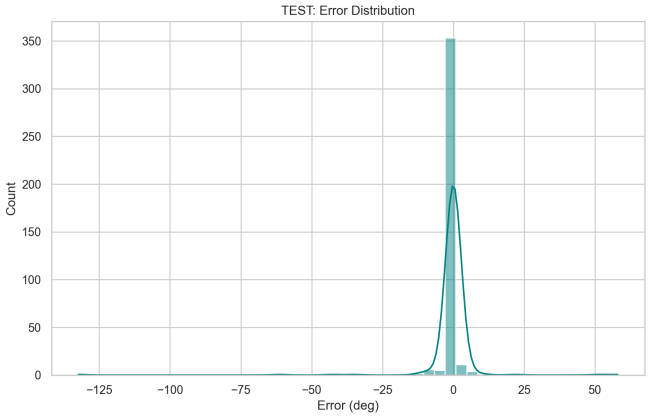
Max Depth Vs N Estimators

3. Full Diagnostic Suite

Visualizing residuals, distributions, and physics compliance.



Actual Vs Pred Test



Error Hist Test