Supplementary Material for the Rebuttal of ReCTSi

1 RESPONSE TO REVIEWER COMMENTS

- **Reviewer ZyK6**:
  - Section 2 for Responses R1 and R2
  - Section 5 for Response R3
- **Reviewer CKLx**:
  - Section 6 for Response R2
- **Reviewer aibo**:
  - Section 3 for Responses R3 and R7
- **Reviewer zG18**:
  - Section 3 for Response R2
  - Section 5 for Response R4
- **Reviewer SHxM**:
  - Section 3 for Response R2
  - Section 4 for Response R1
  - Section 5 for Response R5
  - Section 6 for Response R4
- **Reviewer 5DVn**:
  - Section 2 for Response R3
  - Section 7 for Response R2

2 ADDITIONAL STUDY OF PRISTI AND RECTSI VARIANTS

Table 1 presents the additional study of PriSTi and ReCTSi Variants for Responses R1 and R2 to **Reviewer ZyK6**, and Response R3 to **Reviewer 5DVn**.

Table 1: Additional Studies of PriSTi and ReCTSi Variants on the AQ36 dataset.

Model	FLOPs (M)	Params (K)	Peak Mem (MB)	Latency (ms)	MAE	MSE	MRE
PriSTi	391	731	71.36	8267	**17.384**	**976.875**	**0.219**
ReCTSi-TST	0.32	98	43.29	8.32	36.571	2850.463	0.434
ReCTSi-Informer	**0.03**	**47**	**3.96**	**1.01**	26.582	1850.588	0.356
ReCTSi	0.06	76	7.07	1.26	19.483	1102.159	0.261

3 ADDITIONAL HYPERPARAMETER SENSITIVITY STUDY

Figure 1 presents the additional hyperparameter sensitivity study for Responses R3 and R7 to **Reviewer aibo**, Response R2 to **Reviewer zG18**, and Response R2 to **Reviewer SHxM**.

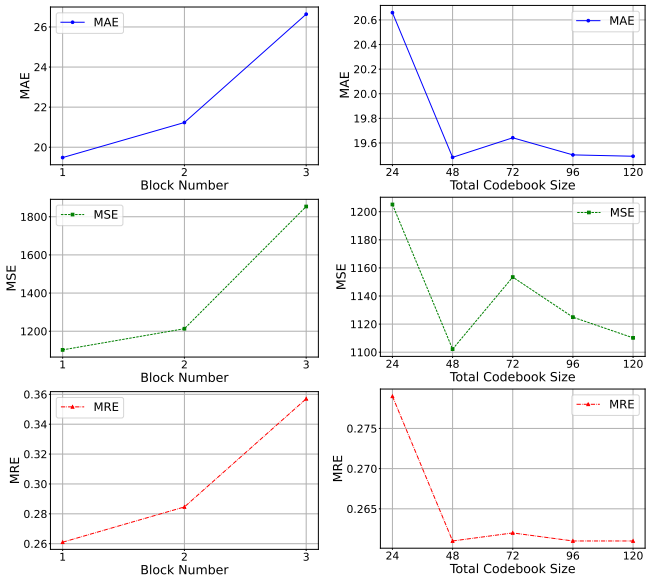
4 SCALABILITY STUDY

Table 2 presents the scalability study for Response R1 to **Reviewer SHxM**.

Table 2: Comparison of Results on AQ36 and AQ437 Datasets

Dataset	AQ36			AQ437		
Model	MAE	MSE	MRE	MAE	MSE	MRE
MEAN	62.299	6525.709	0.835	62.538	6553.716	0.844
MF	39.582	4545.596	0.531	41.720	4649.581	0.549
MICE	38.889	4314.435	0.521	40.659	4540.523	0.540
BRITS	23.393	1276.226	0.314	29.582	2104.346	0.402
PoGeVon*	19.581	1238.820	0.262	-	-	-
ReCTSi	**19.483**	**1102.159**	**0.261**	**23.574**	**1528.774**	**0.322**

*PoGeVon failed to work: Out-of-Memory on the AQ437 dataset.



(a) CaA Block Number **(b) Total Codebook Sizes**

Figure 1: Additional Hyperparameter Sensitivity Studies on the AQ36 dataset.

5 STUDY OF THE IMPACT OF VARYING MISSING RATES

Figures 2, 3, and 4 present the study of the impact of varying missing rates for Response R3 to **Reviewer ZyK6**, Response R4 to **Reviewer zG18**, and Response R5 to **Reviewer SHxM**.

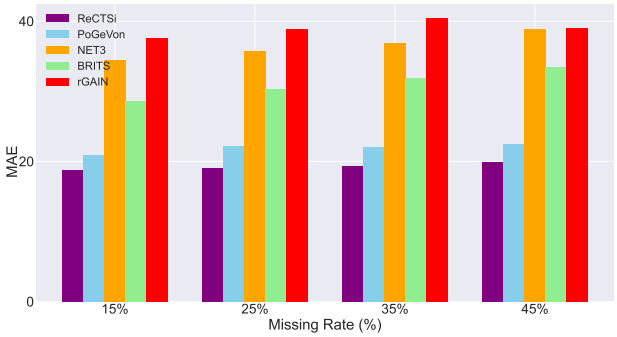


Figure 2: Study of different masking rates on PeMS-BA.

6 EXPLANATIONS OF DIFFERENT CTS PATTERNS

Table 3 presents the explanations of different CTS patterns for Response R2 to **Reviewer CKLx**, Response R3 to **Reviewer aibo**, and Response R4 to **Reviewer SHxM**.

Table 3: CTS Patterns: Characteristics and Practical Meanings

	Persistent		Transient	
Pattern Type	**Characteristics**	**Practical Meaning**	**Characteristics**	**Practical Meaning**
Temporal	Recurring time-related features.	Predictability over time, facilitating forecasting.	Non-recurring, event-driven spikes.	Anomaly detection and real-time adjustments.
Spatial	Stable, long-term inter-series relationships.	Spatial analysis and environmental planning.	Temporary alterations in spatial relationships.	Emergency response and short-term planning.
Spatio-temporal	Stability across both time and space.	Forecasting complex phenomena like congestion spreading.	Variability across time and space.	Understanding dynamic changes, such as traffic alterations due to roadwork.

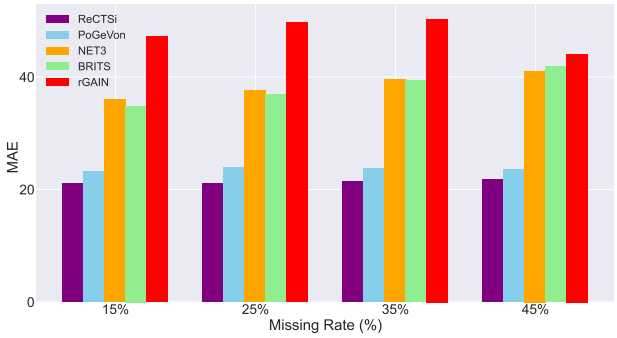


Figure 3: Study of different masking rates on PeMS-LA.

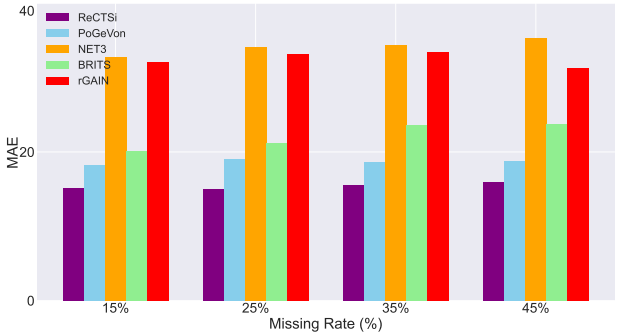


Figure 4: Study of different masking rates on PeMS-SD.

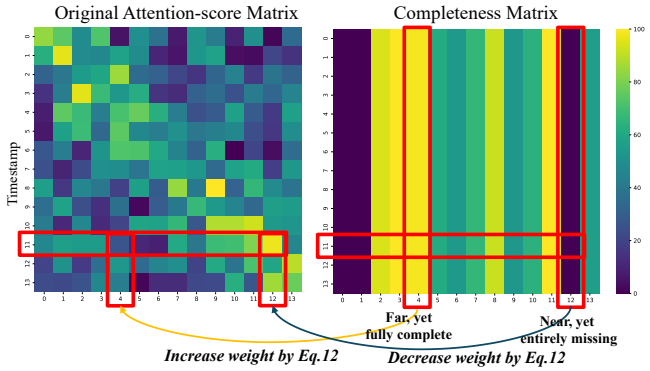


Figure 5: Visualizations of the CaA Mechanism.

7 VISUALIZATIONS OF THE CAA MECHANISM

Figure 5 presents the visualizations of the CaA mechanism for Response R5 to **Reviewer aibo**, and Response R2 to **Reviewer 5DVn**.