

Performance Evaluation of Regional Heatwave Prediction Using Statistical and Deep Learning Models

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Supplementary Table S1. Residual diagnostics for season-wise ARIMA and SARIMA models (training period, Central India).

ADF and KPSS are applied to training residuals, and Ljung–Box p-values (lags 10 and 20) test remaining residual autocorrelation. “OK” indicates both Ljung–Box p-values > 0.05; otherwise the note is “mild autocorrelation”.

Model	Season	ADF p Value	KPSS p Value	Ljung–Box p (Lag 10)	Ljung–Box p (Lag 20)	Residual Note
ARIMA	Winter (Jan–Feb)	0.032	0.081	0.067	0.058	OK
SARIMA	Winter (Jan–Feb)	0.021	0.094	0.112	0.126	OK
ARIMA	Pre-monsoon (Mar–May)	0.028	0.073	0.061	0.054	OK
SARIMA	Pre-monsoon (Mar–May)	0.017	0.089	0.134	0.141	OK
ARIMA	Monsoon (Jun–Sep)	0.041	0.062	0.052	0.049	Mild Autocorrelation
SARIMA	Monsoon (Jun–Sep)	0.024	0.078	0.095	0.102	OK
ARIMA	Post-monsoon (Oct–Dec)	0.036	0.069	0.058	0.052	OK
SARIMA	Post-monsoon (Oct–Dec)	0.019	0.087	0.121	0.133	OK
ARIMA	Winter (Jan–Feb)	0.032	0.081	0.067	0.058	OK