

Table 1: Overall results of the quantitative evaluation of corruption-resilient and baseline forecasting models in terms of **MSE**. We compare the forecasting models on all three datasets with different number of forecasting steps. A lower **MSE** indicates a better model. In all cases our forecast-corrupt-denoise approach with GPs improves performance of the original forecasting model (Autoformer) and isotropic Gaussian noise model (AutoDI). (Note that to provide a fair comparison, all the baseline models considered in this study were trained and evaluated under the *same* experimental setup as our proposed model. Consequently, the reported results may differ from those originally reported in the respective baseline papers. We provide the baseline models implementation in our online repository).

| Dataset     | Horizon | <b>AutoDG(Ours)</b>    | Autoformer             | AutoDI          | NBeats          | DLinear         | DeepAR          | CMGP            | ARIMA           |
|-------------|---------|------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Traffic     | 24      | <b>0.392</b><br>±0.006 | 0.412<br>±0.006        | 0.405<br>±0.003 | 0.475<br>±0.008 | 0.553<br>±0.000 | 0.888<br>±0.000 | 0.824<br>±0.000 | 1.436<br>±0.000 |
|             | 48      | <b>0.387</b><br>±0.001 | 0.422<br>±0.004        | 0.416<br>±0.001 | 0.462<br>±0.012 | 0.547<br>±0.000 | 0.944<br>±0.000 | 0.828<br>±0.000 | 1.444<br>±0.000 |
|             | 72      | <b>0.380</b><br>±0.001 | 0.383<br>±0.003        | 0.394<br>±0.002 | 0.465<br>±0.003 | 0.540<br>±0.000 | 0.877<br>±0.000 | 0.893<br>±0.000 | 1.459<br>±0.000 |
|             | 96      | <b>0.385</b><br>±0.003 | 0.400<br>±0.004        | 0.411<br>±0.002 | 0.464<br>±0.002 | 0.539<br>±0.000 | 0.860<br>±0.000 | 0.859<br>±0.000 | 1.444<br>±0.000 |
| Electricity | 24      | <b>0.165</b><br>±0.001 | 0.187<br>±0.003        | 0.170<br>±0.001 | 0.200<br>±0.001 | 0.222<br>±0.000 | 1.039<br>±0.000 | 1.000<br>±0.000 | 1.707<br>±0.000 |
|             | 48      | <b>0.188</b><br>±0.003 | 0.203<br>±0.008        | 0.207<br>±0.003 | 0.218<br>±0.000 | 0.238<br>±0.000 | 1.014<br>±0.000 | 0.987<br>±0.000 | 1.729<br>±0.000 |
|             | 72      | <b>0.209</b><br>±0.004 | 0.230<br>±0.001        | 0.253<br>±0.004 | 0.234<br>±0.007 | 0.264<br>±0.000 | 1.023<br>±0.000 | 0.993<br>±0.000 | 1.759<br>±0.000 |
|             | 96      | <b>0.211</b><br>±0.001 | 0.230<br>±0.014        | 0.316<br>±0.002 | 0.237<br>±0.001 | 0.264<br>±0.000 | 1.013<br>±0.000 | 0.971<br>±0.000 | 1.747<br>±0.000 |
| Solar       | 24      | <b>0.446</b><br>±0.002 | 0.472<br>±0.003        | 0.473<br>±0.001 | 0.612<br>±0.006 | 0.828<br>±0.000 | 0.999<br>±0.000 | 1.001<br>±0.000 | 1.869<br>±0.000 |
|             | 48      | <b>0.546</b><br>±0.003 | 0.603<br>±0.004        | 0.574<br>±0.001 | 0.717<br>±0.001 | 0.928<br>±0.000 | 0.968<br>±0.000 | 1.007<br>±0.000 | 1.872<br>±0.000 |
|             | 72      | <b>0.666</b><br>±0.003 | <b>0.667</b><br>±0.004 | 0.698<br>±0.002 | 0.766<br>±0.006 | 0.978<br>±0.000 | 0.974<br>±0.000 | 1.002<br>±0.000 | 1.855<br>±0.000 |
|             | 96      | <b>0.713</b><br>±0.004 | 0.739<br>±0.009        | 0.730<br>±0.005 | 0.827<br>±0.001 | 1.004<br>±0.000 | 0.974<br>±0.000 | 0.997<br>±0.000 | 1.874<br>±0.000 |