

Figure 1: Original time energy-weather series (a) Target time series orig.train (b) Periods of electricity time series orig.train

Data	Models	MAPE target	MAPE full	AIC
1	VAR	NaN	NaN	NaN
	SVR	0.166	0.150	353.639
	Neural network	0.116	0.093	278.961
2	VAR	NaN	NaN	NaN
	SVR	0.137	0.087	267.902
	Neural network	0.130	0.077	249.849
3	VAR	NaN	NaN	NaN
	SVR	0.278	0.360	490.073
	Neural network	0.155	0.137	339.109
4	VAR	NaN	NaN	NaN
	SVR	0.309	0.436	519.972
	Neural network	0.202	0.200	398.518
5	VAR	NaN	NaN	NaN
	SVR	0.234	0.263	440.808
	Neural network	0.143	0.130	330.640
6	VAR	NaN	NaN	NaN
	SVR	0.309	0.437	520.001
	Neural network	0.174	0.143	346.371
7	VAR	NaN	NaN	NaN
	SVR	0.207	0.219	412.406
	Neural network	0.176	0.155	358.580

8	VAR	NaN	NaN	NaN
	SVR	0.309	0.429	517.163
	Neural network	0.174	0.145	348.438
9	VAR	NaN	NaN	NaN
	SVR	0.203	0.210	405.660
	Neural network	0.234	0.259	438.281
10	VAR	NaN	NaN	NaN
	SVR	0.269	0.326	474.380
	Neural network	0.167	0.135	336.684
11	VAR	NaN	NaN	NaN
	SVR	0.278	0.360	490.073
	Neural network	0.198	0.193	392.540
12	VAR	NaN	NaN	NaN
	SVR	0.309	0.436	519.972
	Neural network	0.168	0.135	336.860
13	VAR	NaN	NaN	NaN
	SVR	0.234	0.263	440.808
	Neural network	0.229	0.243	428.775
14	VAR	NaN	NaN	NaN
	SVR	0.309	0.437	520.001
	Neural network	0.241	0.271	445.760
15	VAR	NaN	NaN	NaN
	SVR	0.207	0.219	412.406
	Neural network	0.163	0.149	352.295
16	VAR	NaN	NaN	NaN
	SVR	0.309	0.429	517.163
	Neural network	0.192	0.170	373.165
17	VAR	NaN	NaN	NaN
	SVR	0.203	0.210	405.660
	Neural network	0.214	0.221	413.744
18	VAR	NaN	NaN	NaN
	SVR	0.269	0.326	474.380
	Neural network	0.188	0.160	363.521

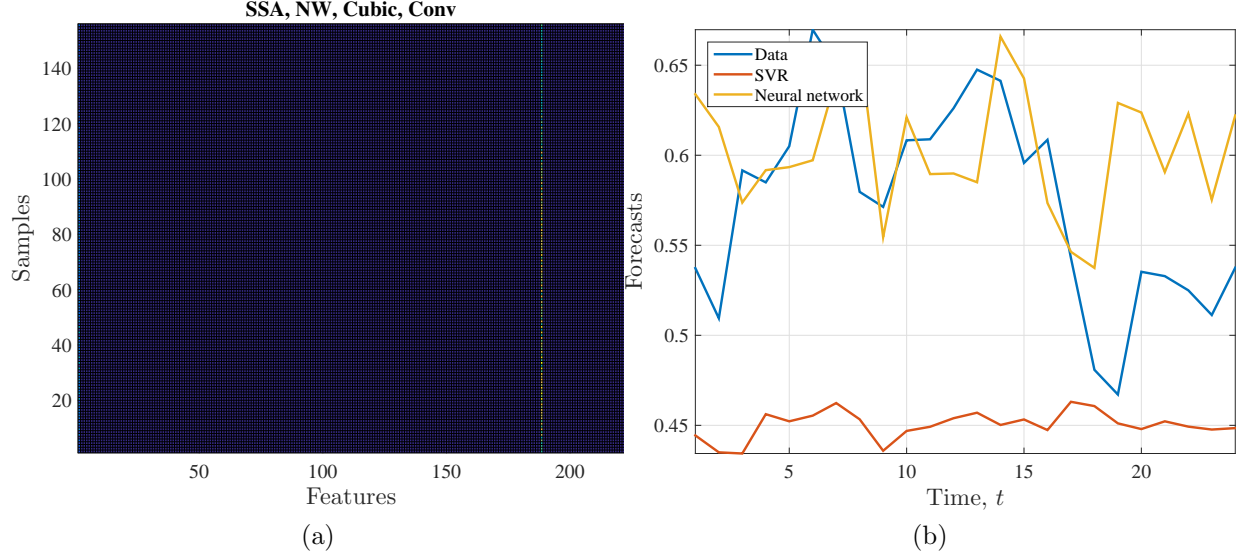


Figure 2: (a) Feature generation results for generation.orig.train.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.orig.train.eps. VAR, SVR, Neural network

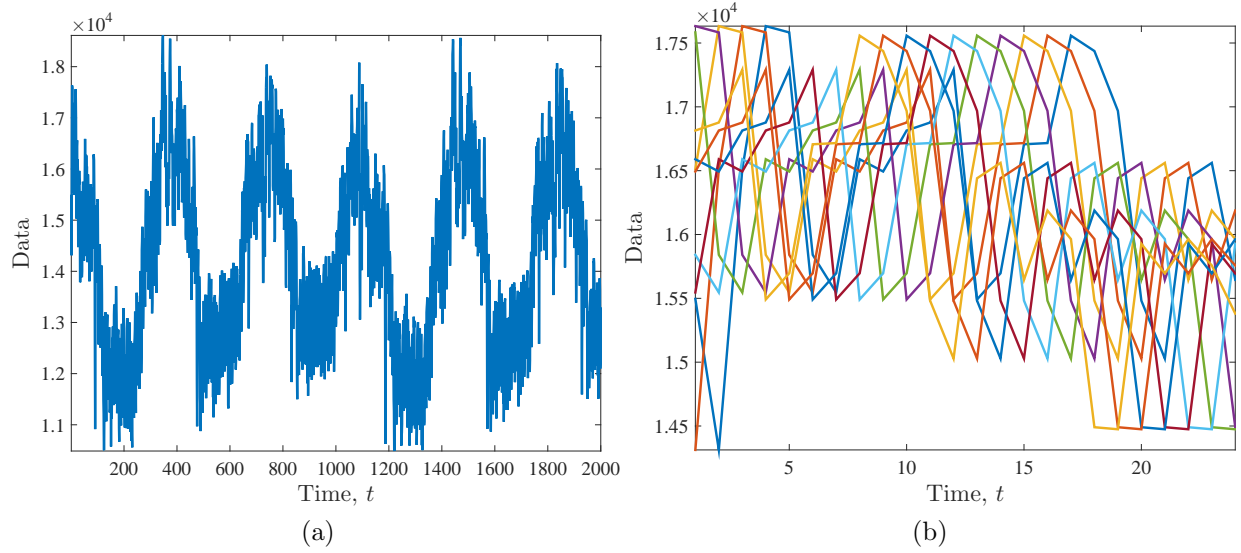


Figure 3: Original time energy-weather series (a) Target time series orig.test (b) Periods of electricity time series orig.test

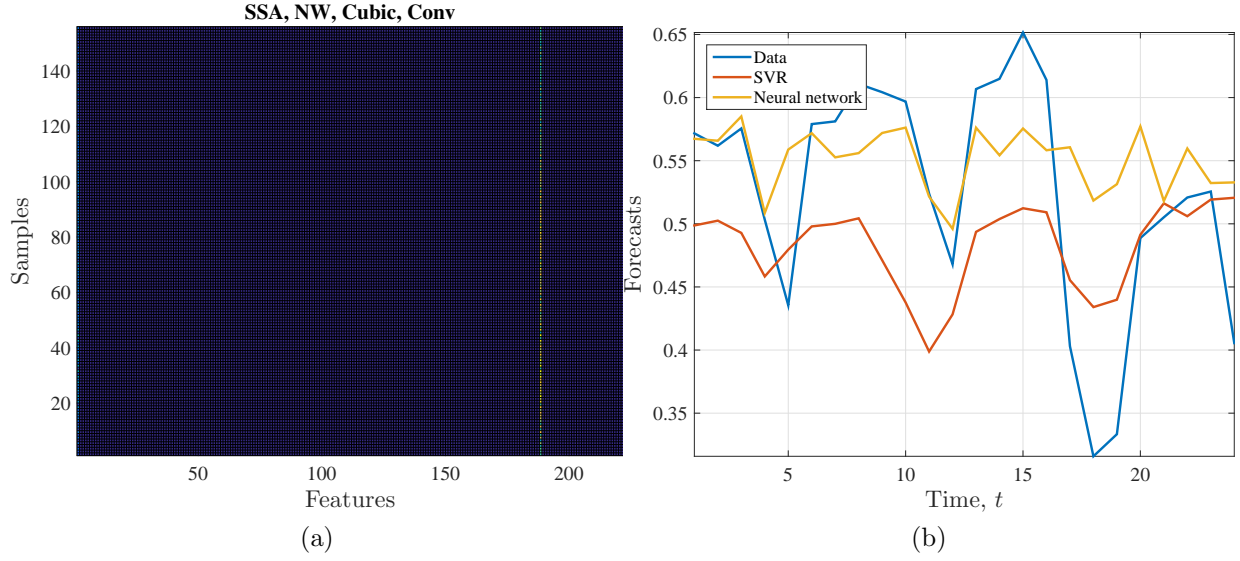


Figure 4: (a) Feature generation results for generation.orig.test.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.orig.test.eps. VAR, SVR, Neural network

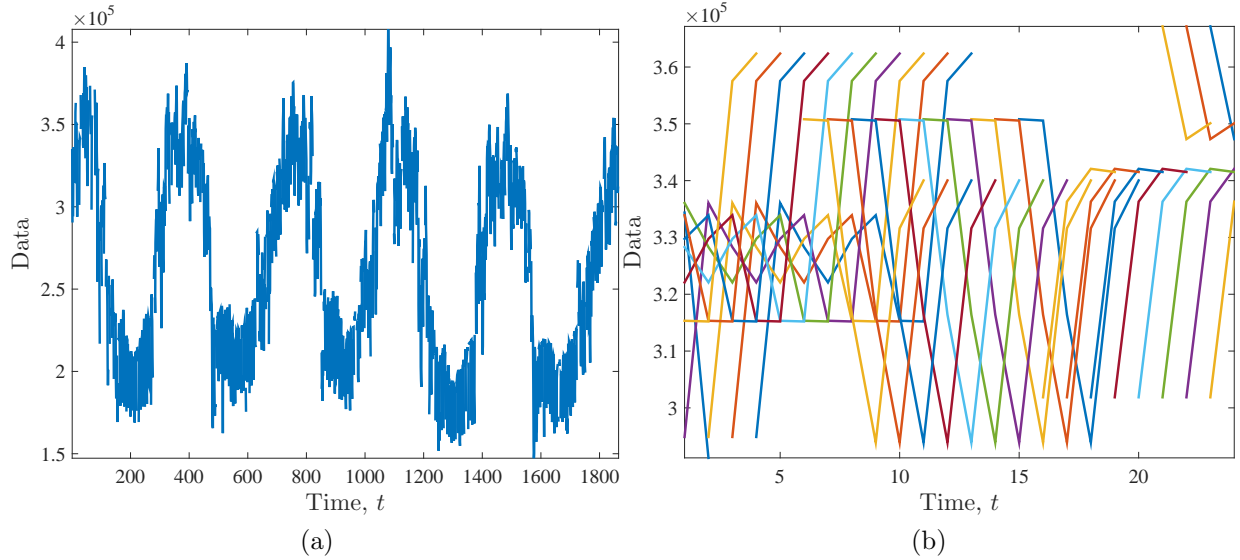


Figure 5: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.01 (b) Periods of electricity time series missing.value.train.0.01

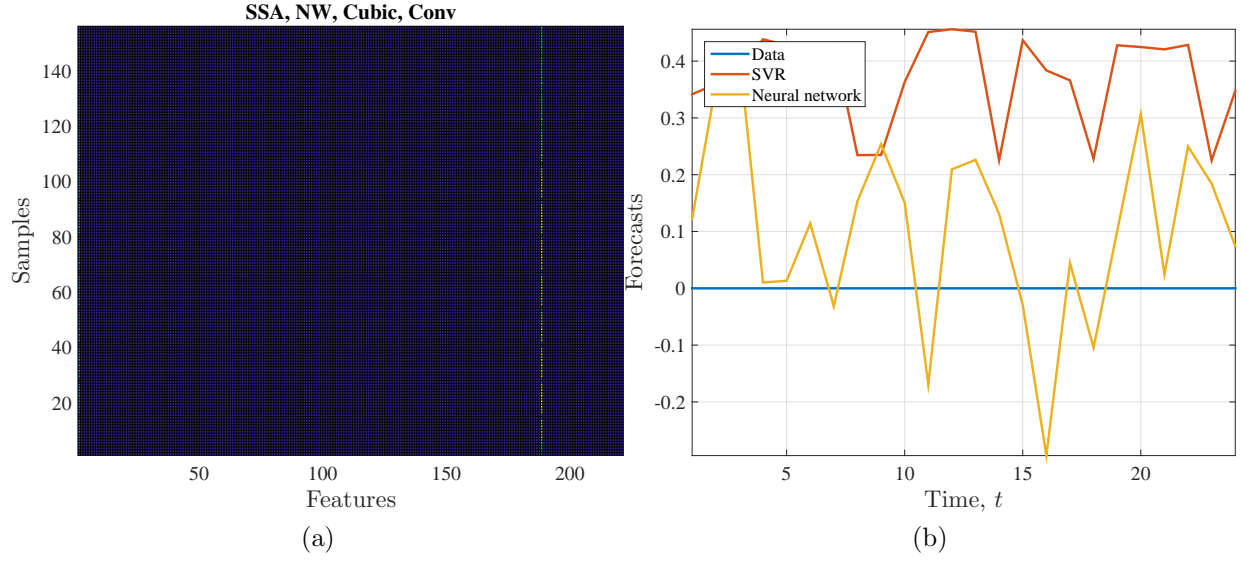


Figure 6: (a) Feature generation results for generation.missing.value.train.0.01.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.01.eps. VAR, SVR, Neural network

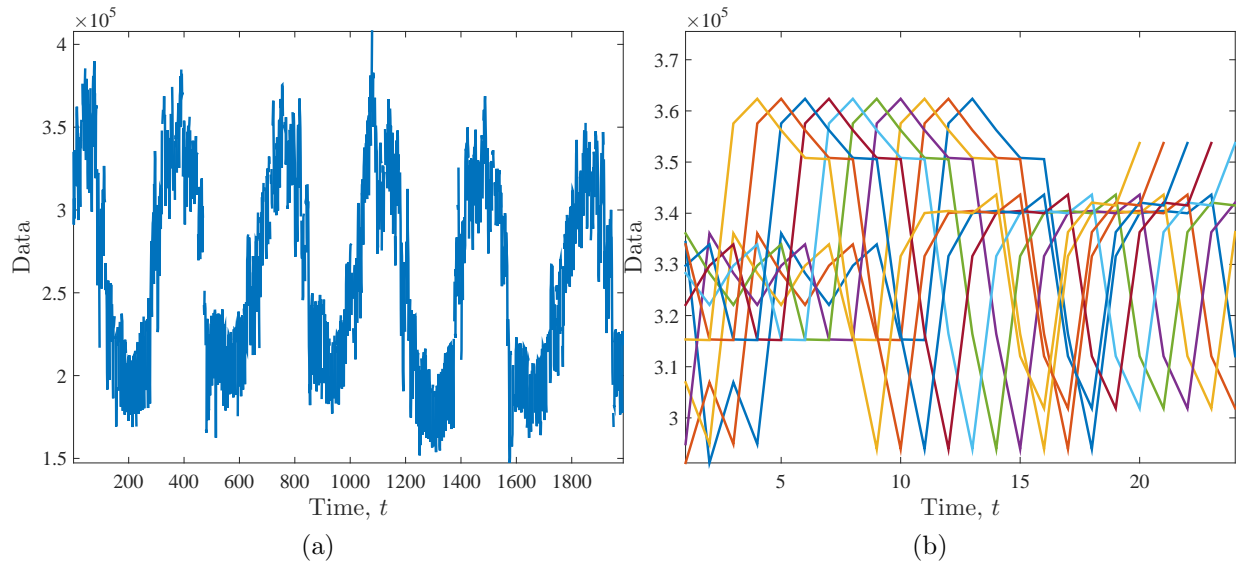


Figure 7: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.01 (b) Periods of electricity time series missing.value.test.0.01

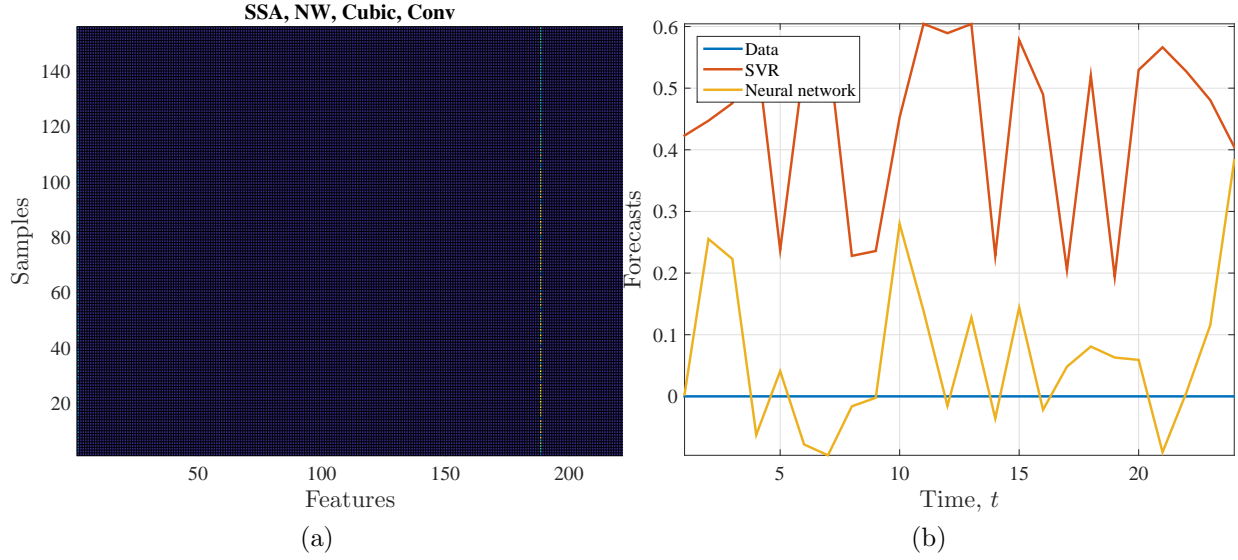


Figure 8: (a) Feature generation results for generation.missing.value.test.0.01.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.01.eps. VAR, SVR, Neural network

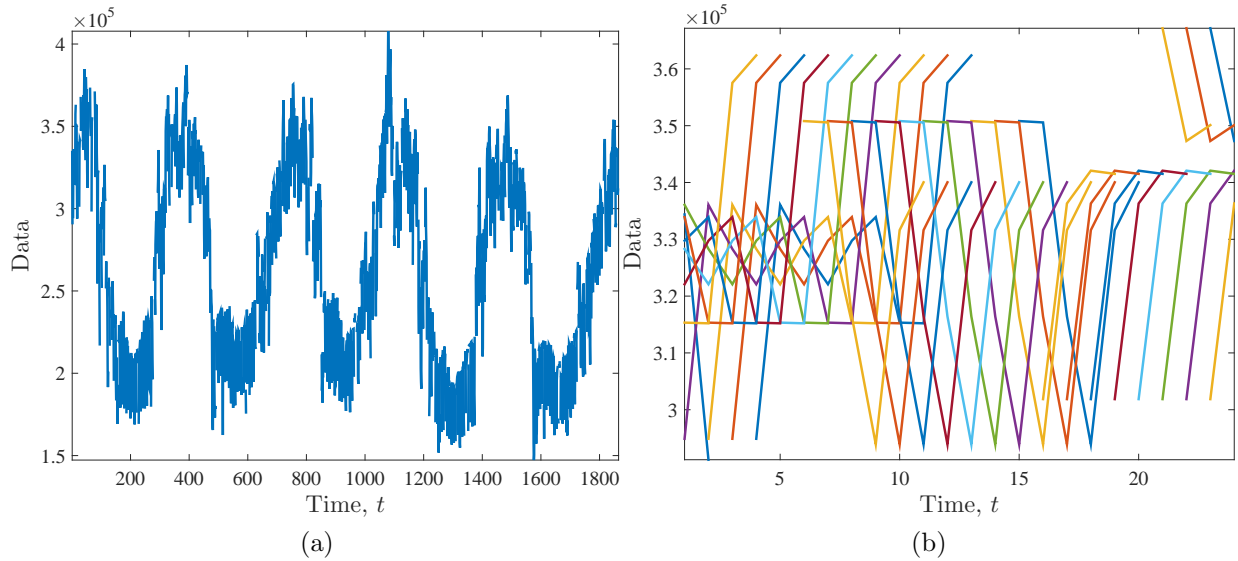


Figure 9: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.03 (b) Periods of electricity time series missing.value.train.0.03



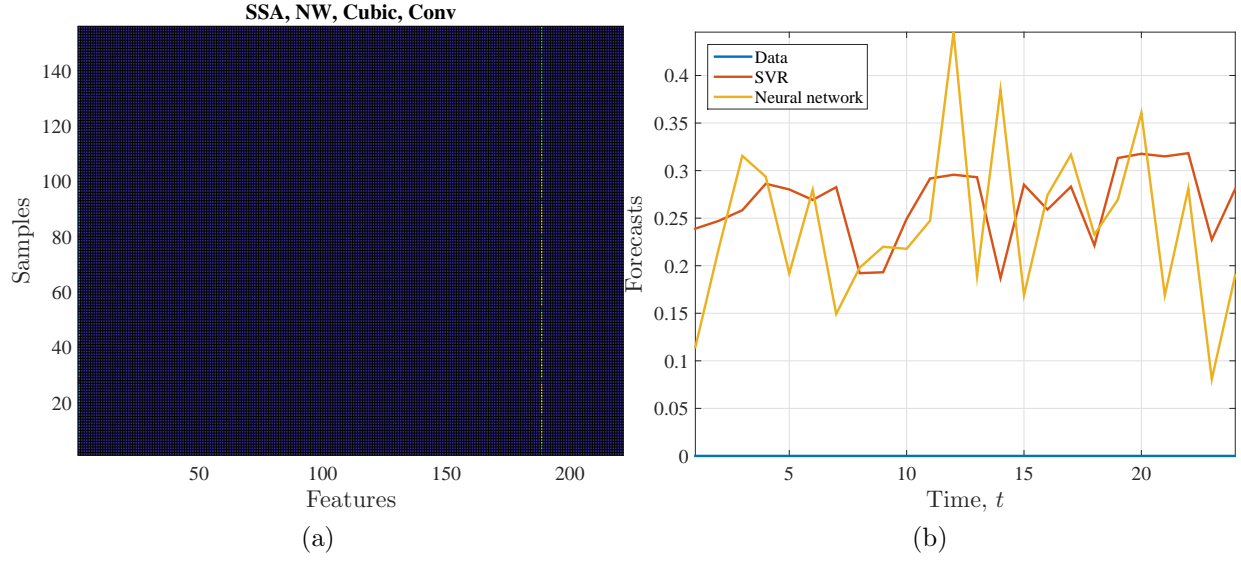


Figure 10: (a) Feature generation results for generation.missing.value.train.0.03.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.03.eps. VAR, SVR, Neural network

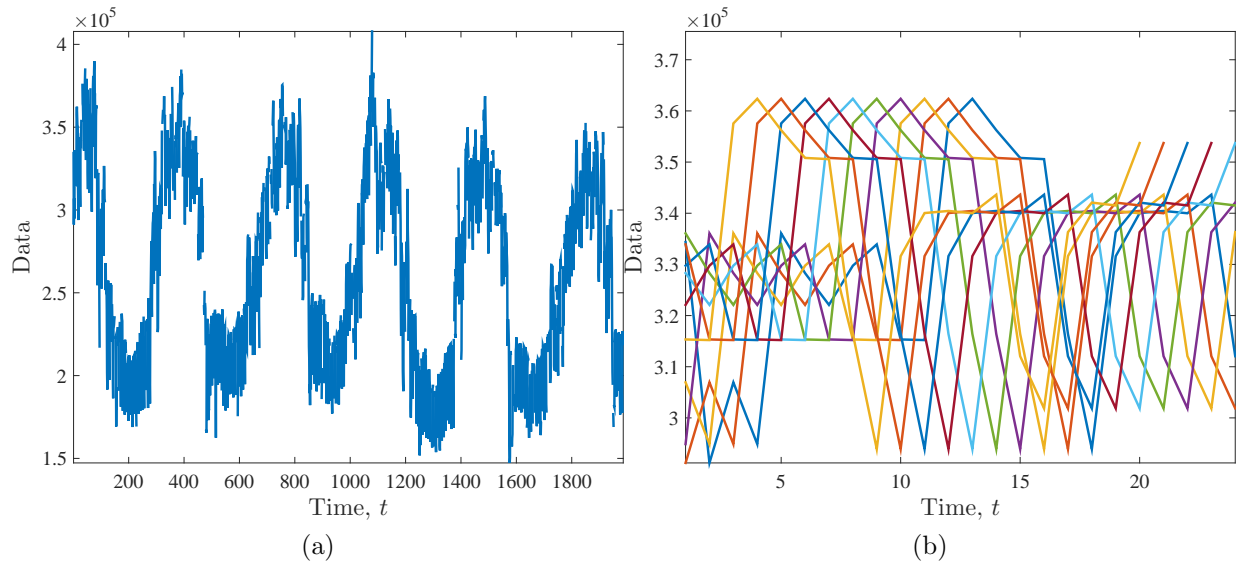


Figure 11: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.03 (b) Periods of electricity time series missing.value.test.0.03

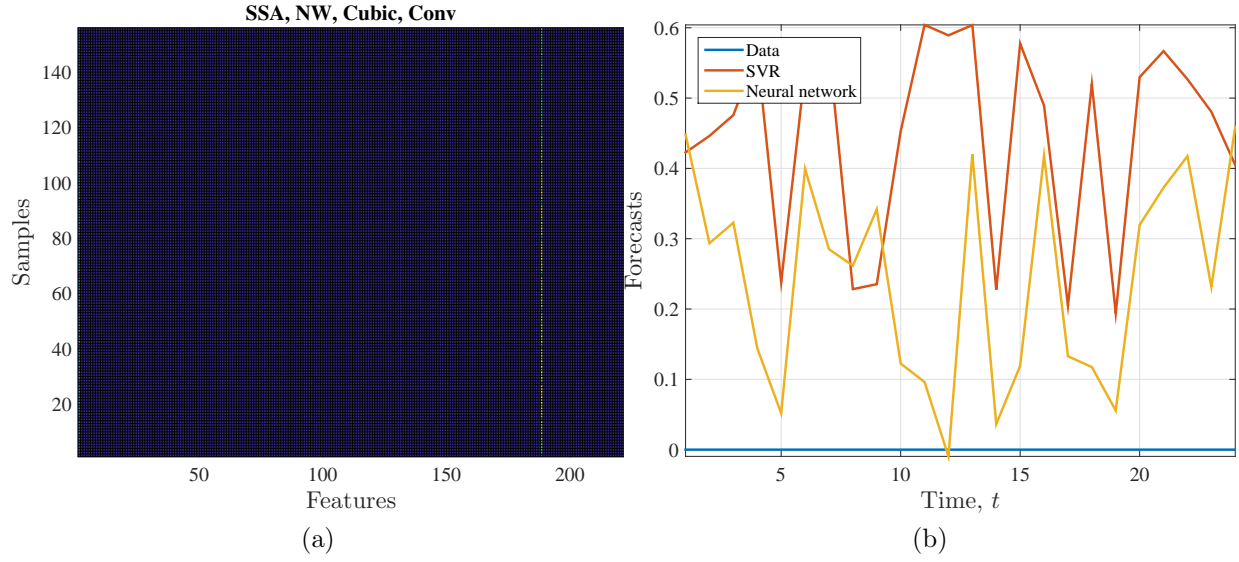


Figure 12: (a) Feature generation results for generation.missing.value.test.0.03.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.03.eps. VAR, SVR, Neural network

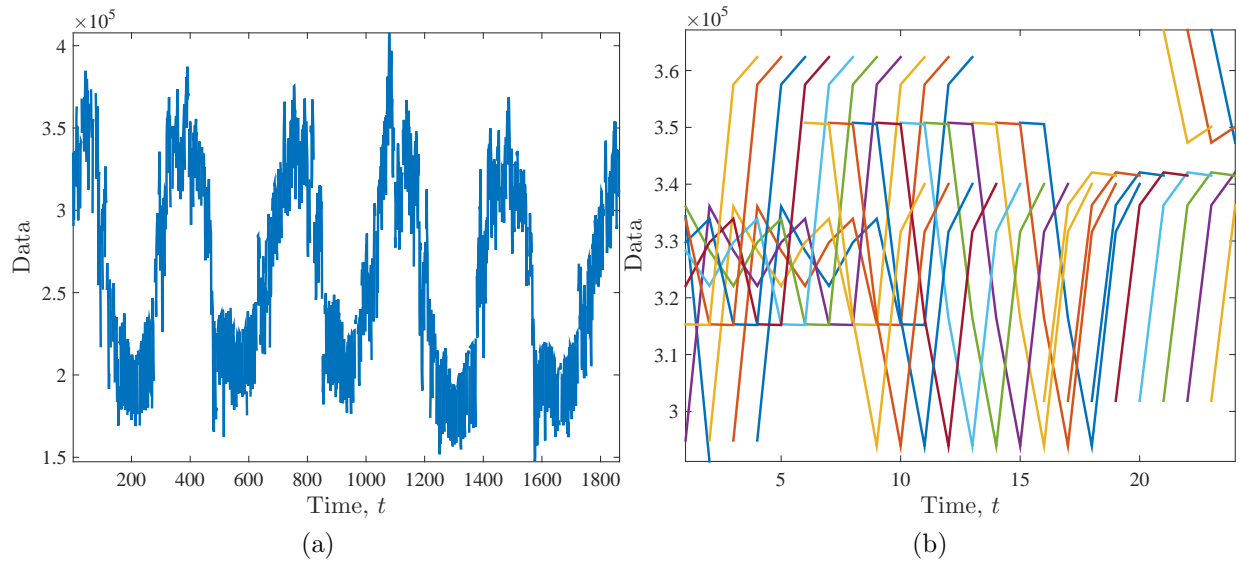


Figure 13: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.05 (b) Periods of electricity time series missing.value.train.0.05



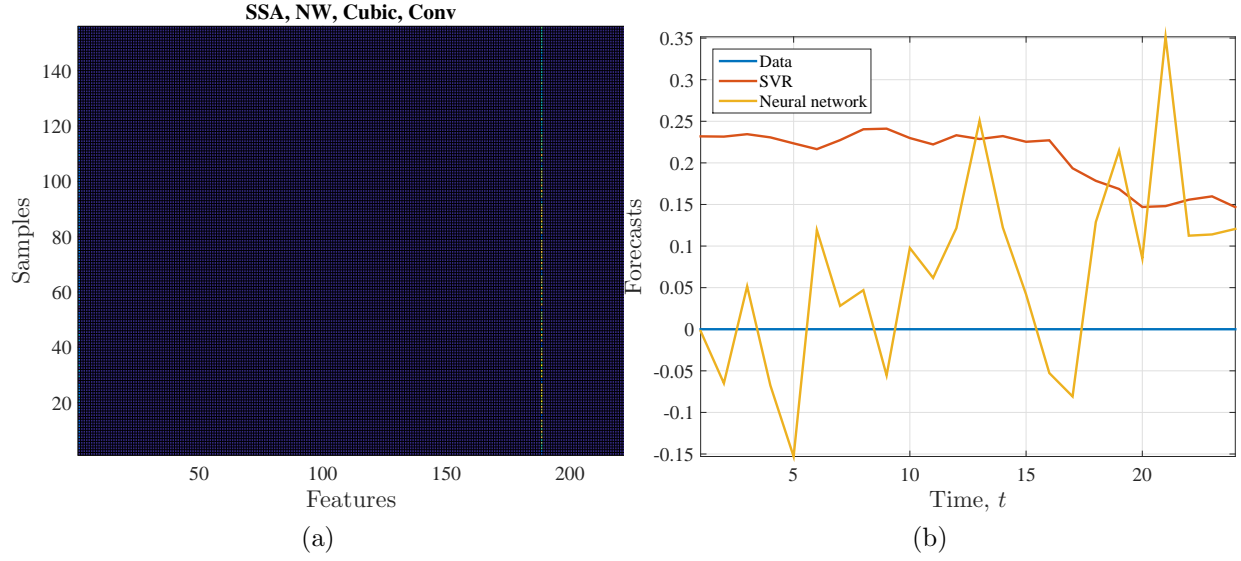


Figure 14: (a) Feature generation results for generation.missing.value.train.0.05.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.05.eps. VAR, SVR, Neural network

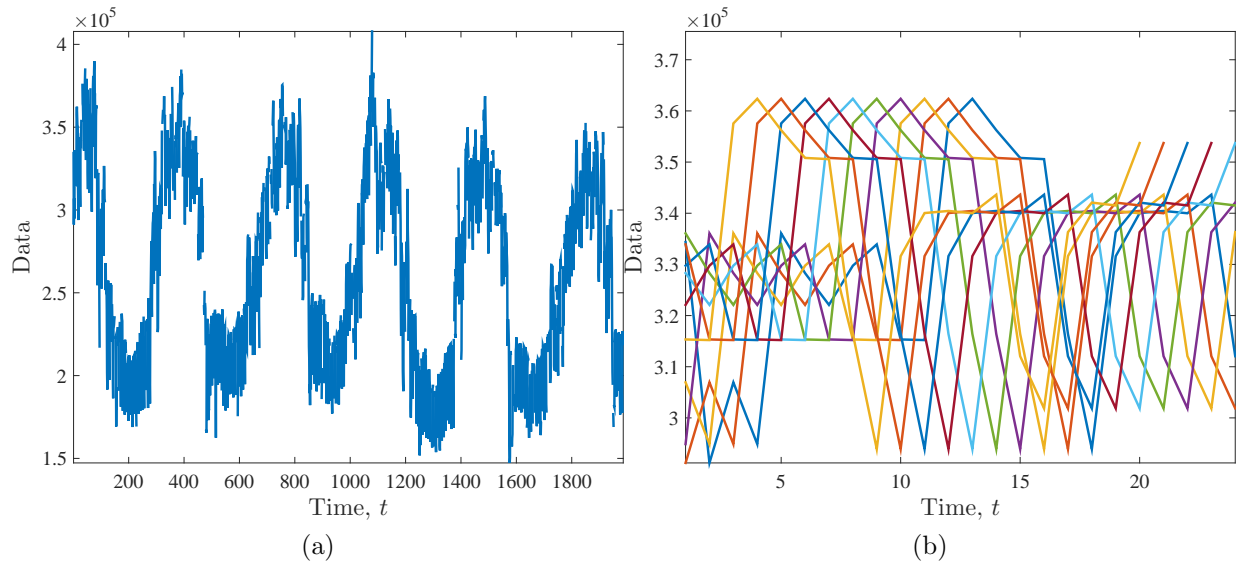


Figure 15: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.05 (b) Periods of electricity time series missing.value.test.0.05

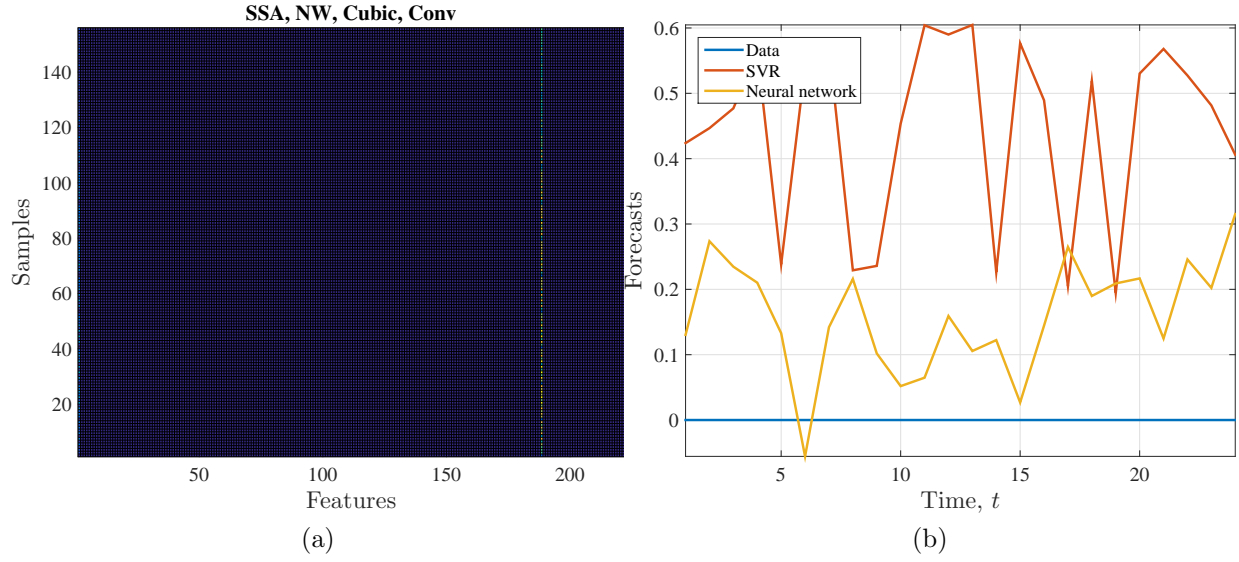


Figure 16: (a) Feature generation results for generation.missing.value.test.0.05.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.05.eps. VAR, SVR, Neural network

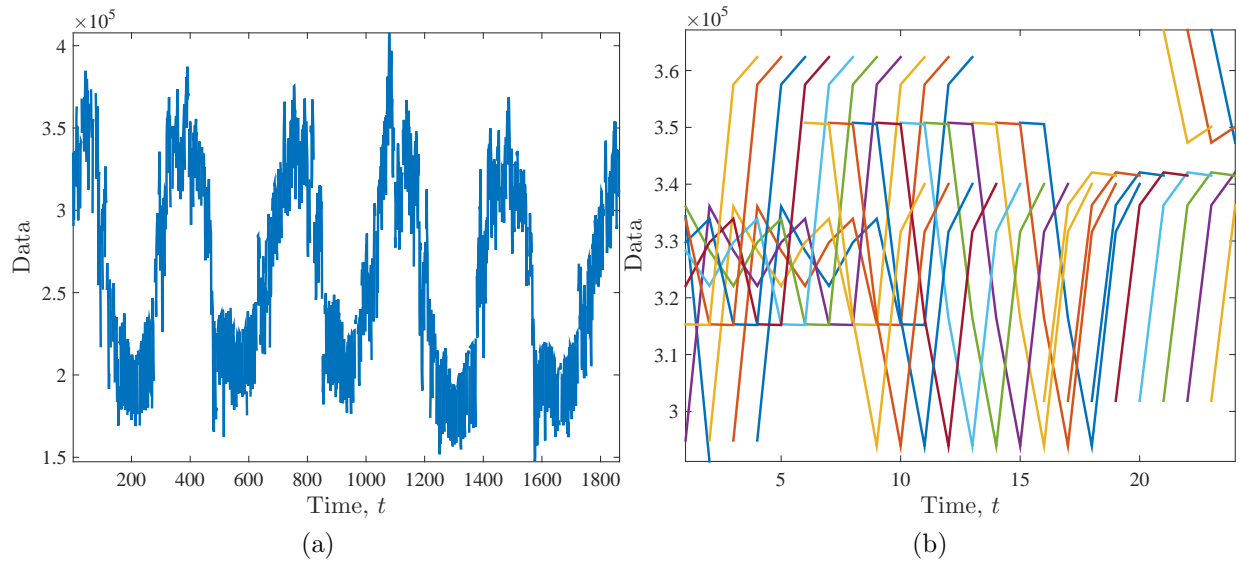


Figure 17: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.1 (b) Periods of electricity time series missing.value.train.0.1

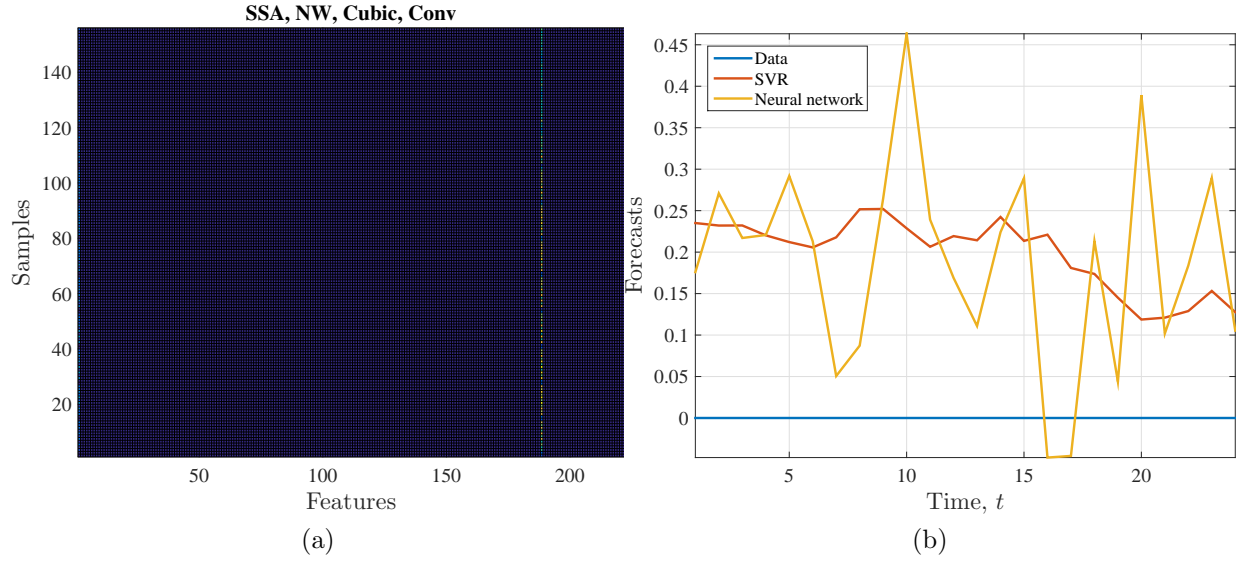


Figure 18: (a) Feature generation results for generation.missing.value.train.0.1.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.1.eps. VAR, SVR, Neural network

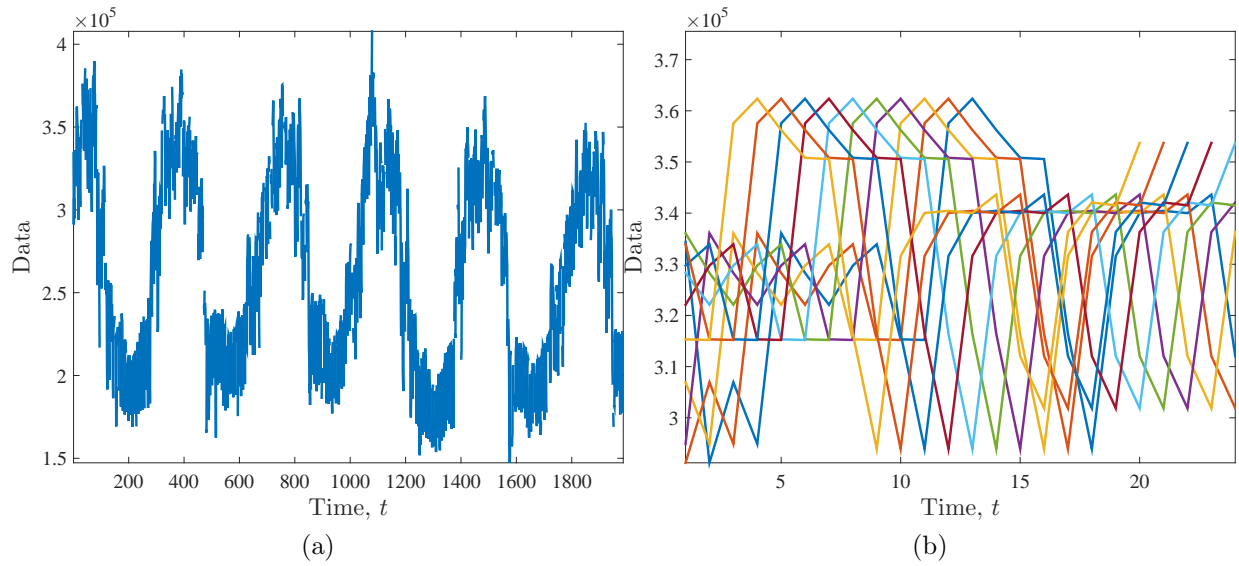


Figure 19: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.1 (b) Periods of electricity time series missing.value.test.0.1

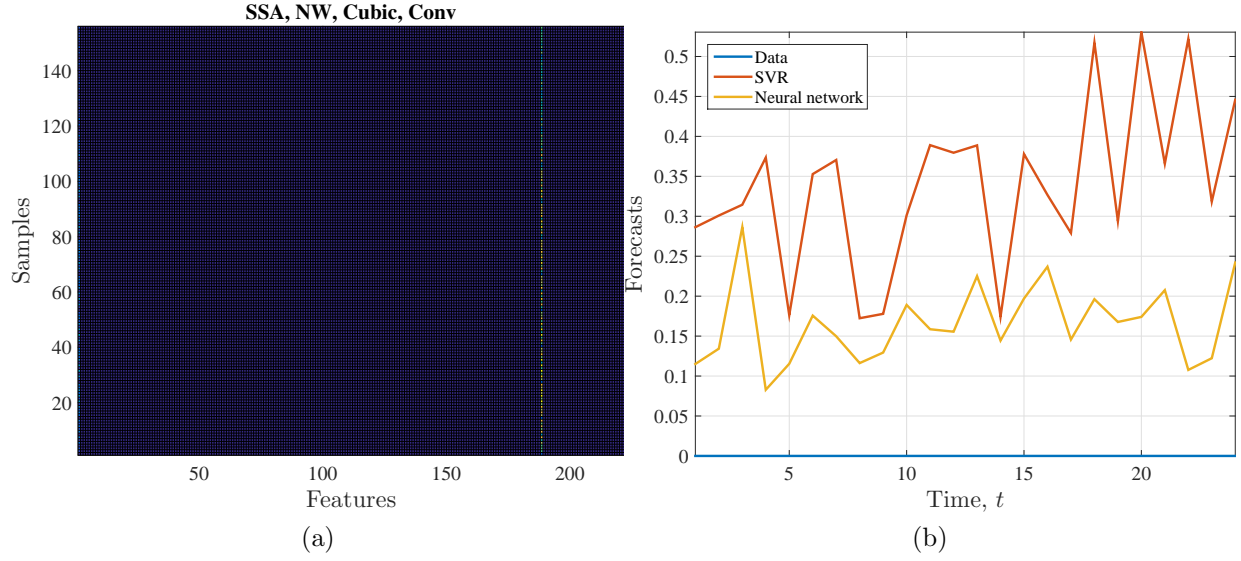


Figure 20: (a) Feature generation results for generation.missing.value.test.0.1.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.1.eps. VAR, SVR, Neural network

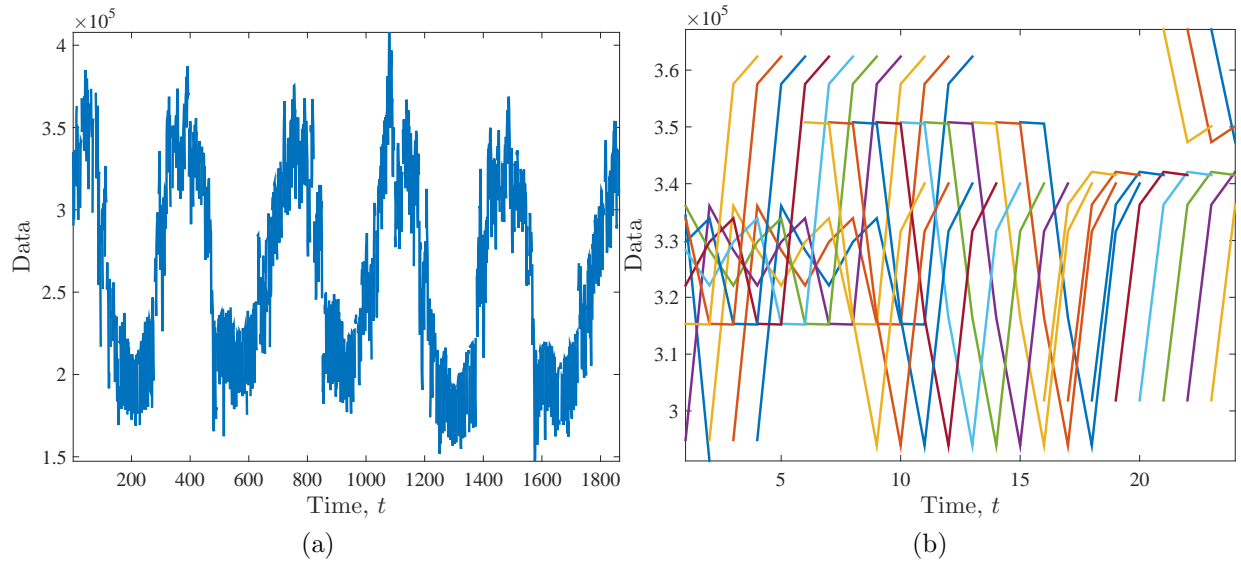


Figure 21: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.01 (b) Periods of electricity time series missing.value.train.0.01

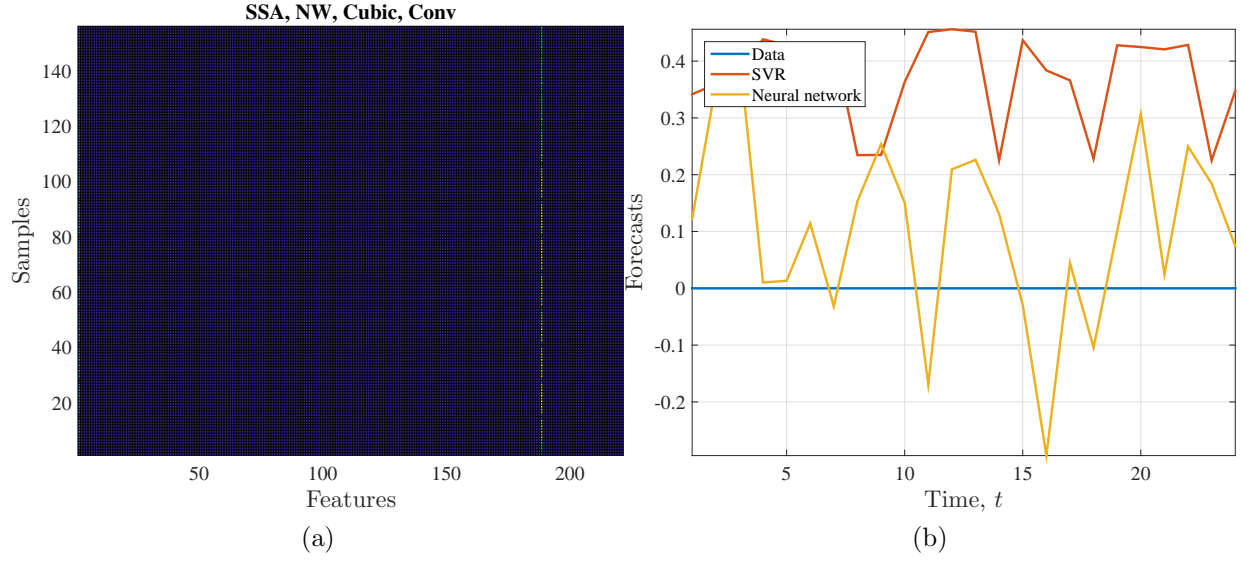


Figure 22: (a) Feature generation results for generation.missing.value.train.0.01.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.01.eps. VAR, SVR, Neural network

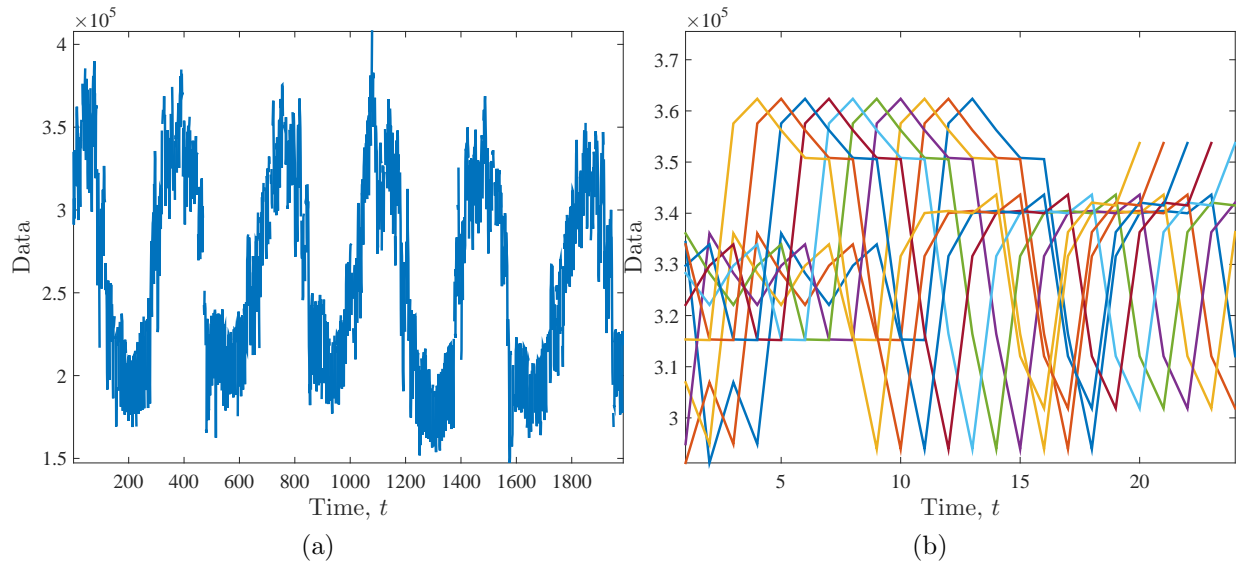


Figure 23: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.01 (b) Periods of electricity time series missing.value.test.0.01



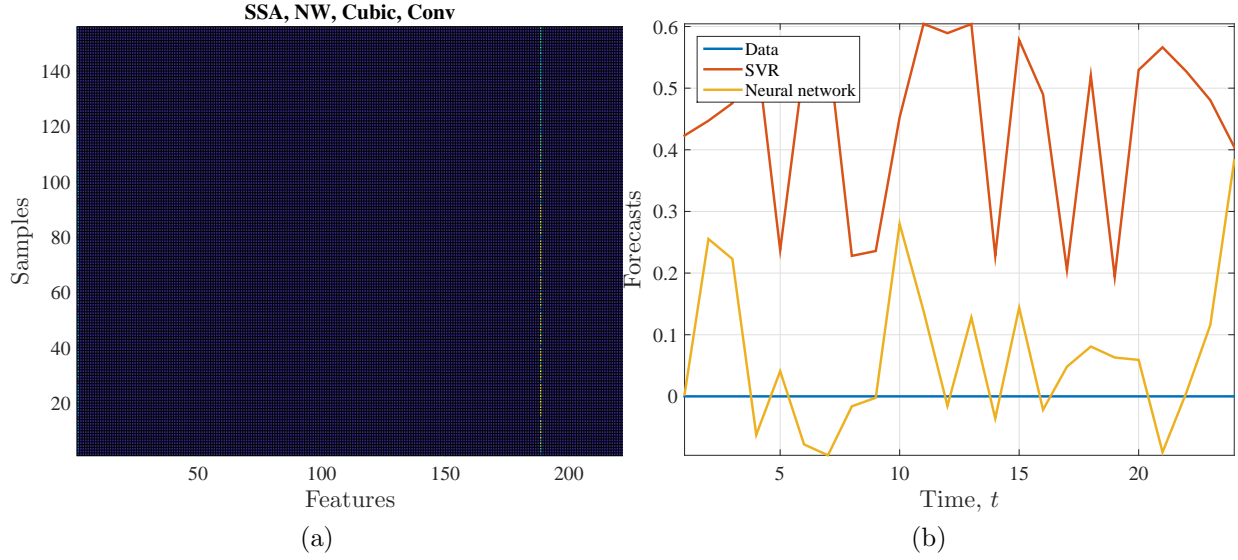


Figure 24: (a) Feature generation results for generation.missing.value.test.0.01.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.01.eps. VAR, SVR, Neural network

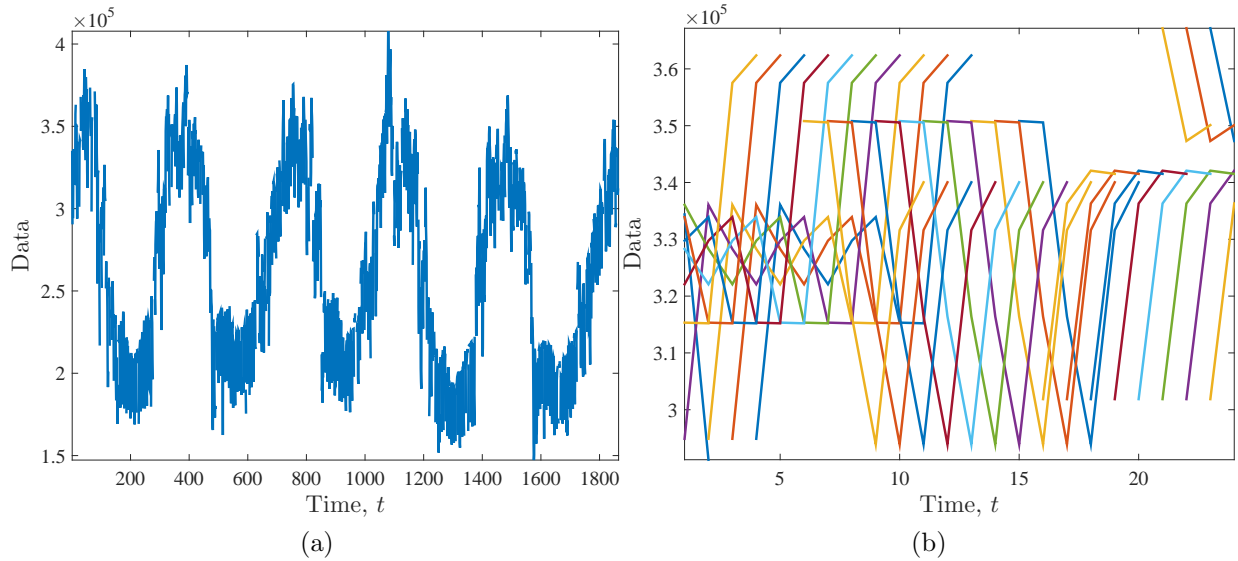


Figure 25: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.03 (b) Periods of electricity time series missing.value.train.0.03



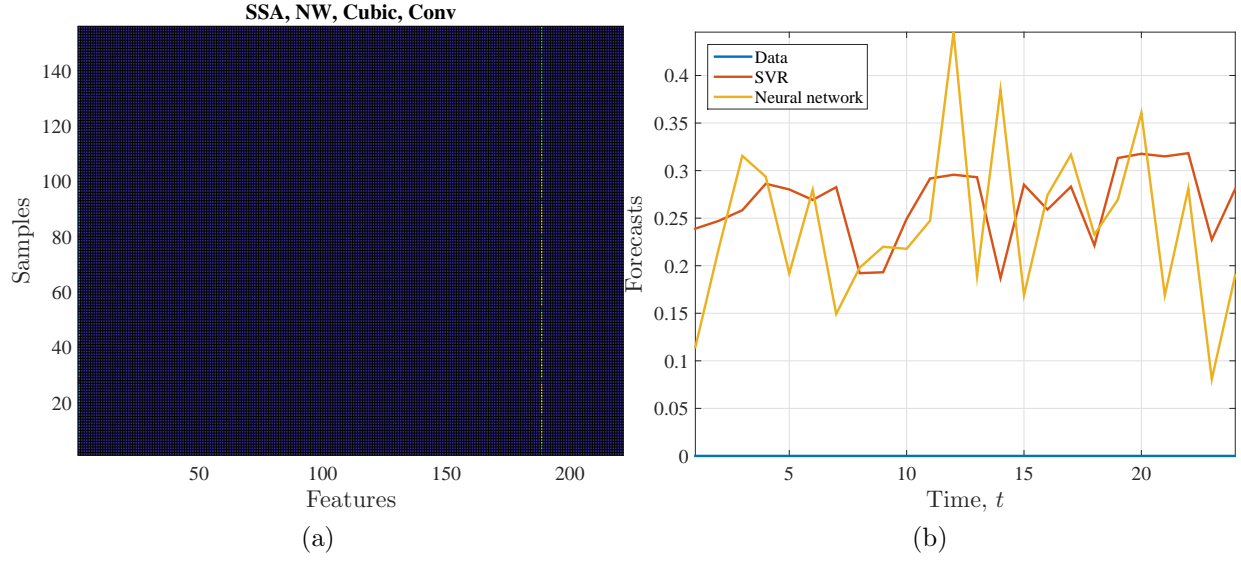


Figure 26: (a) Feature generation results for generation.missing.value.train.0.03.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.03.eps. VAR, SVR, Neural network

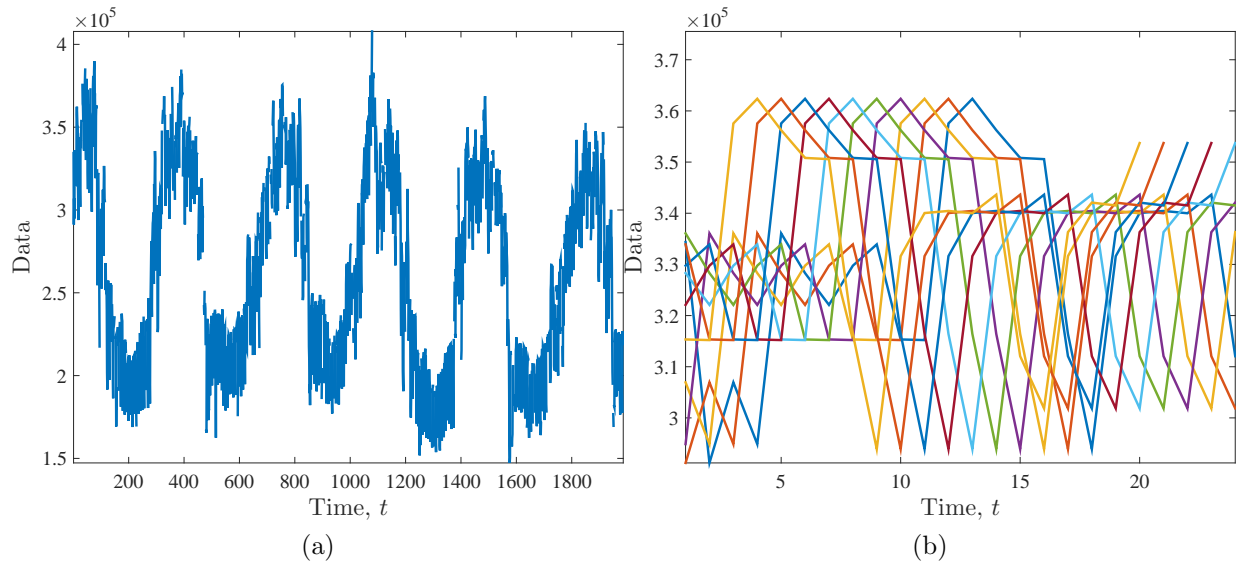


Figure 27: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.03 (b) Periods of electricity time series missing.value.test.0.03

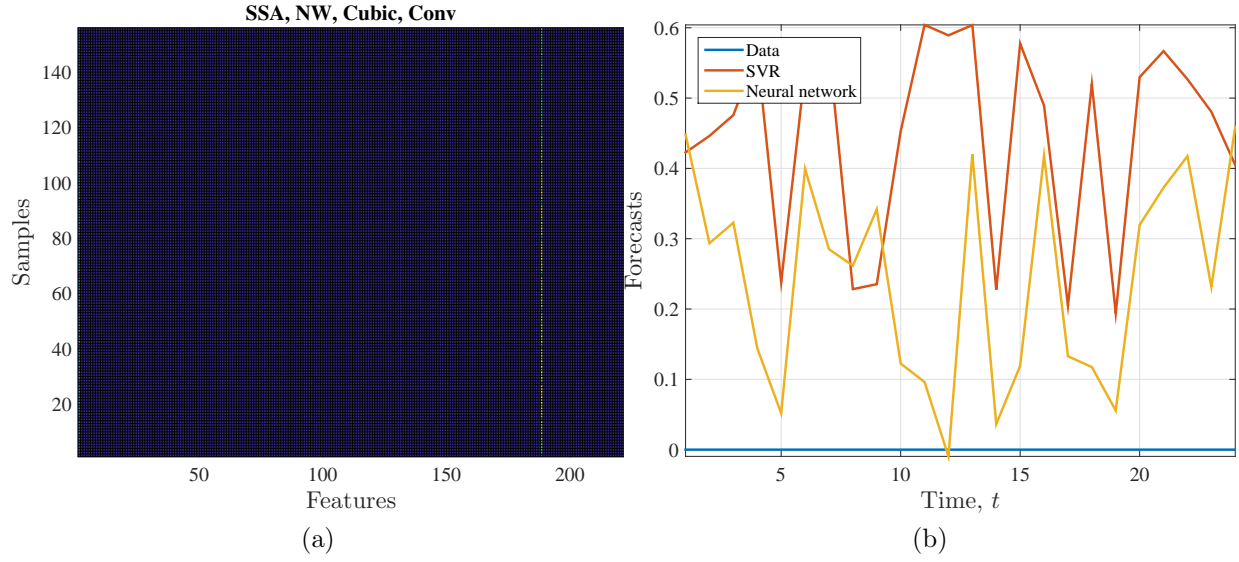


Figure 28: (a) Feature generation results for generation.missing.value.test.0.03.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.03.eps. VAR, SVR, Neural network

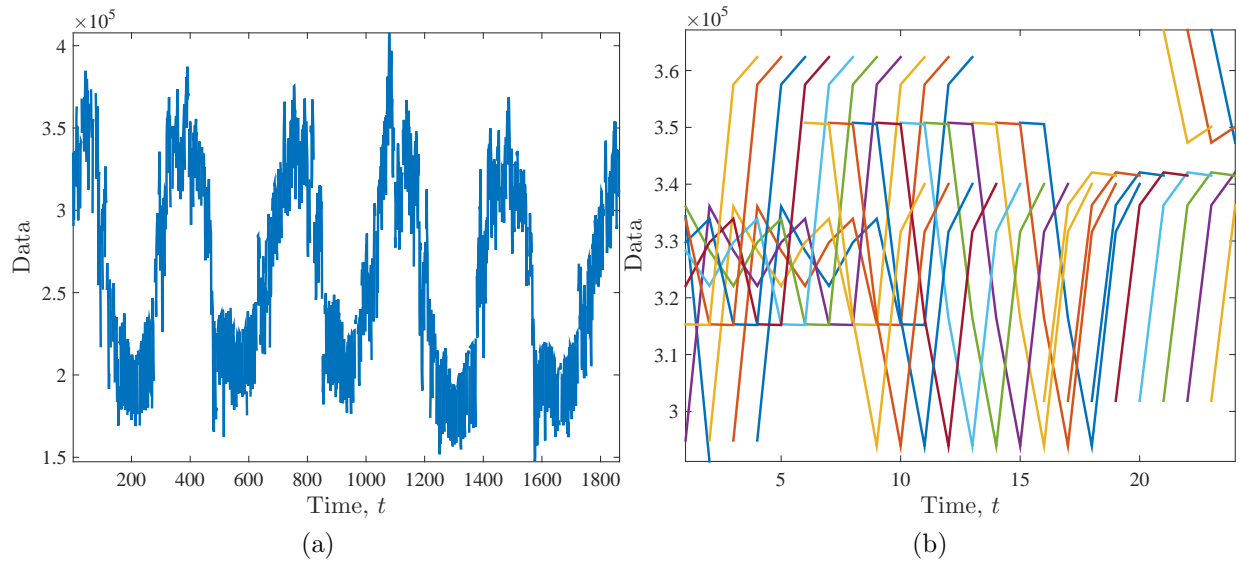


Figure 29: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.05 (b) Periods of electricity time series missing.value.train.0.05

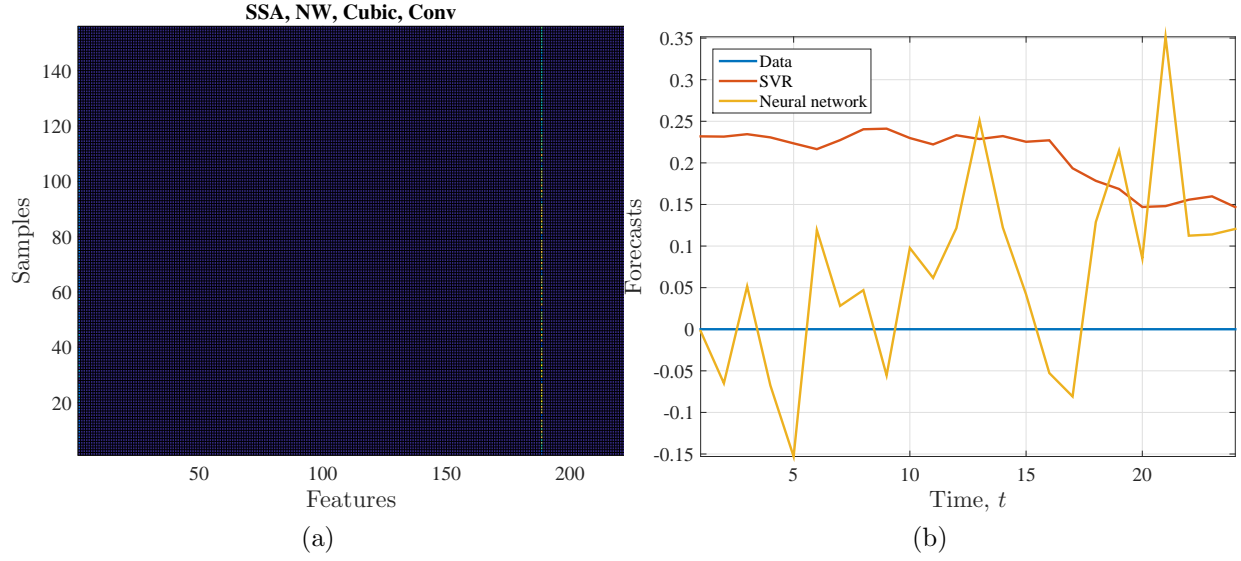


Figure 30: (a) Feature generation results for generation.missing.value.train.0.05.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.05.eps. VAR, SVR, Neural network

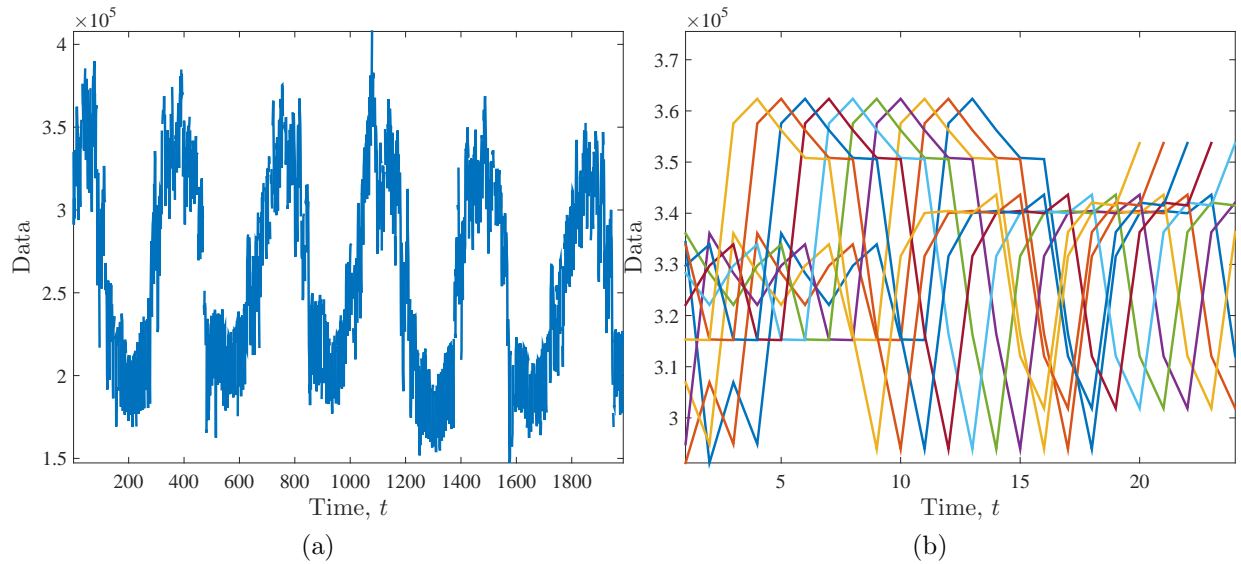


Figure 31: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.05 (b) Periods of electricity time series missing.value.test.0.05

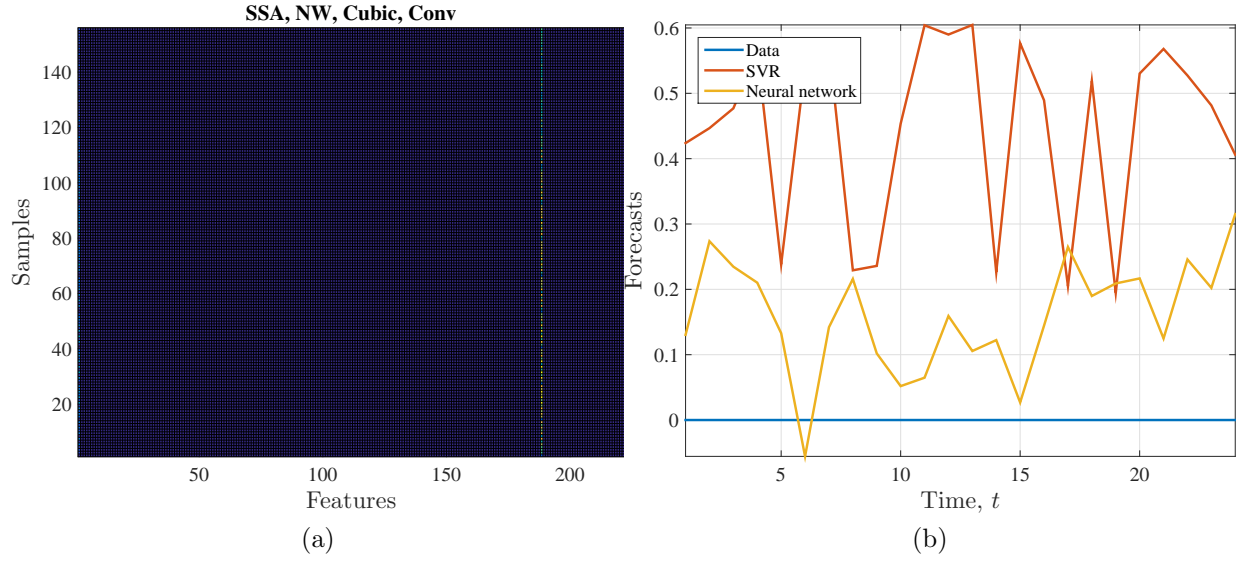


Figure 32: (a) Feature generation results for generation.missing.value.test.0.05.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.05.eps. VAR, SVR, Neural network

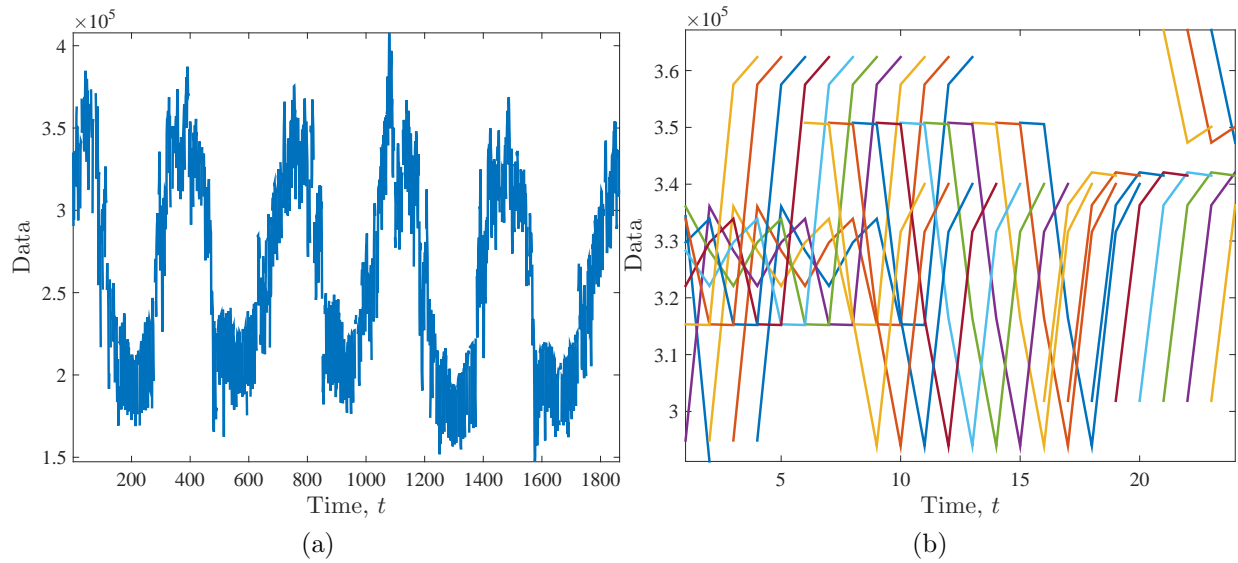


Figure 33: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.1 (b) Periods of electricity time series missing.value.train.0.1

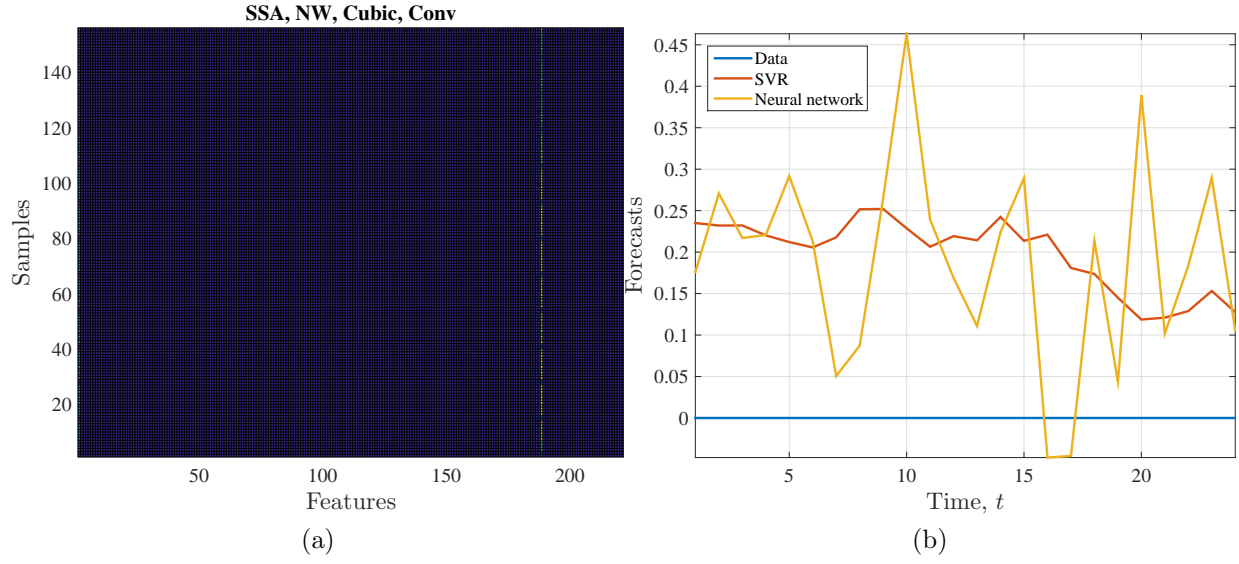


Figure 34: (a) Feature generation results for generation.missing.value.train.0.1.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.train.0.1.eps. VAR, SVR, Neural network

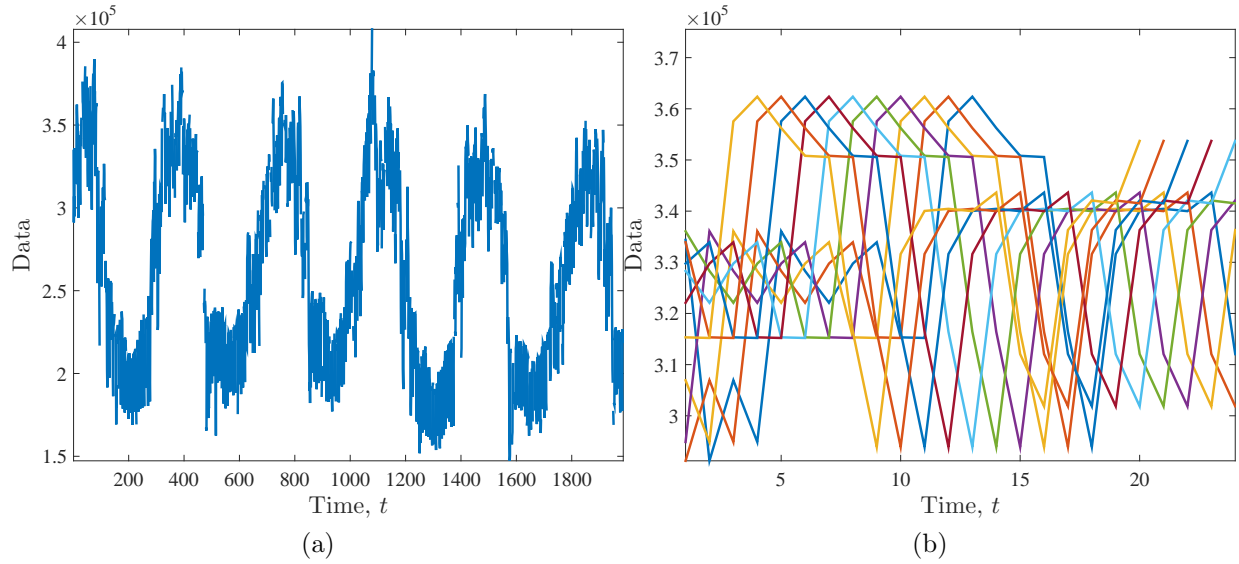


Figure 35: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.1 (b) Periods of electricity time series missing.value.test.0.1



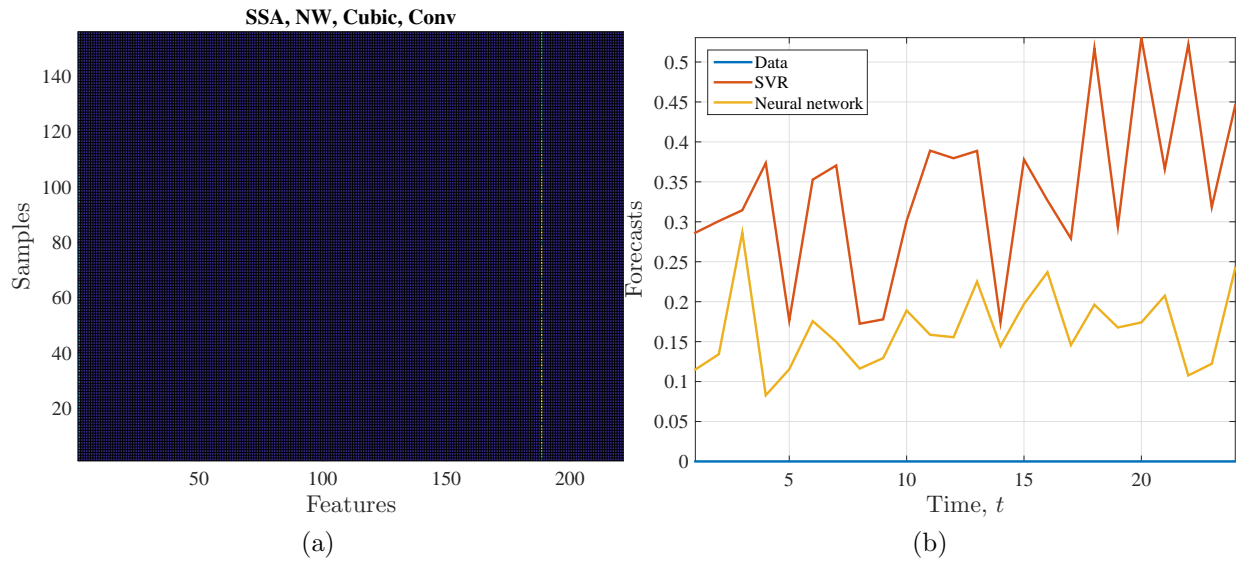


Figure 36: (a) Feature generation results for generation.missing.value.test.0.1.eps. SSA, NW, Cubic, Conv (b) Forecasting results for res.missing.value.test.0.1.eps. VAR, SVR, Neural network