

Рис. 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
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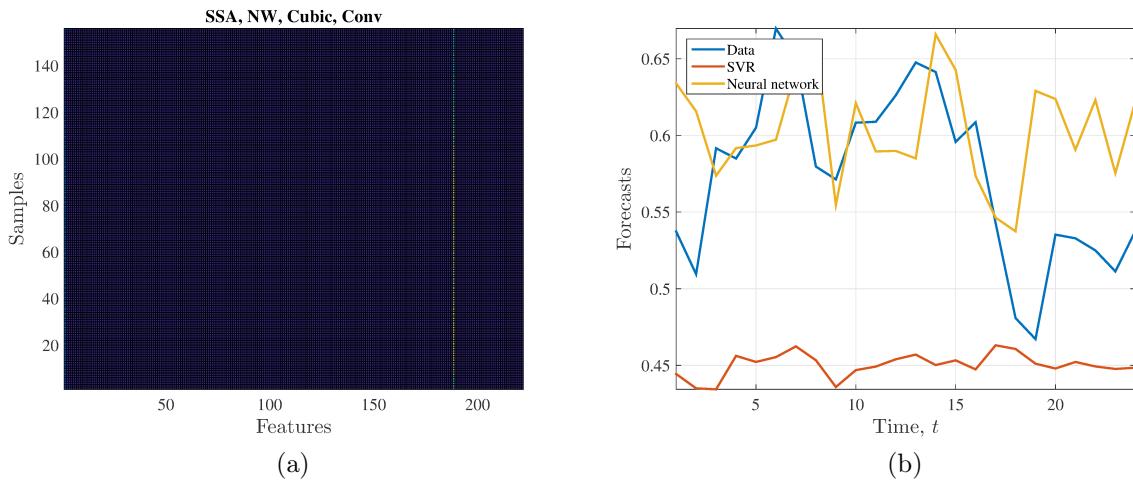


Рис. 2: (a) Feature generation results for generation.orig.train.png. SSA, NW, Cubic, Conv
 (b) Forecasting results for res.orig.train.png. VAR, SVR, Neural network

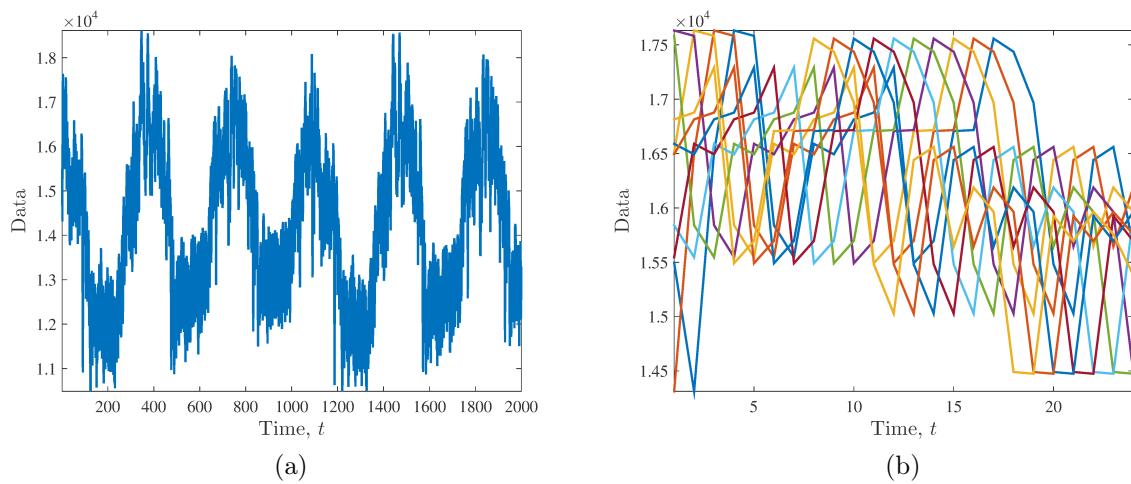


Рис. 3: Original time energy-weather series (a) Target time series orig.test (b) Periods of electricity time series orig.test

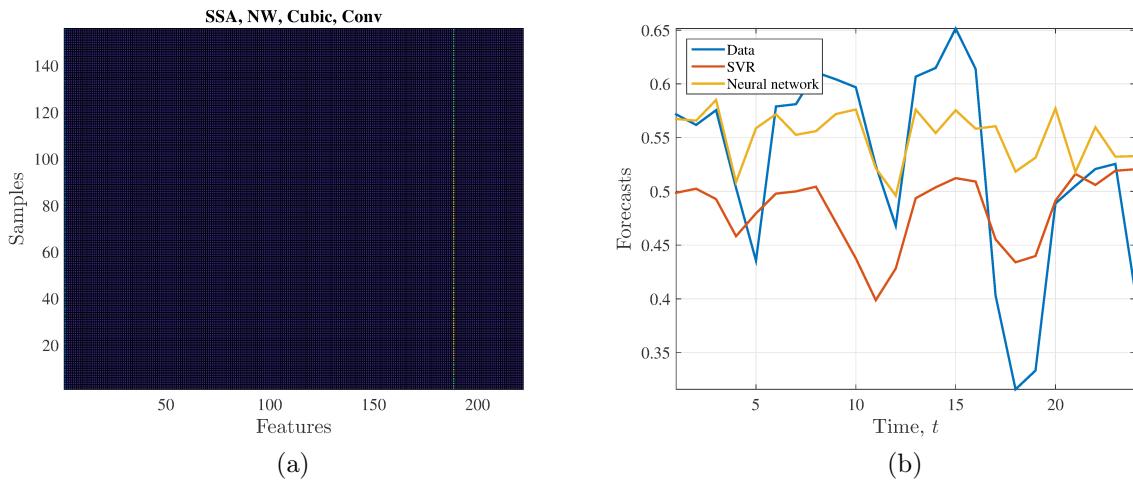


Рис. 4: (a) Feature generation results for `generation.orig.test.png`. SSA, NW, Cubic, Conv
 (b) Forecasting results for `res.orig.test.png`. VAR, SVR, Neural network

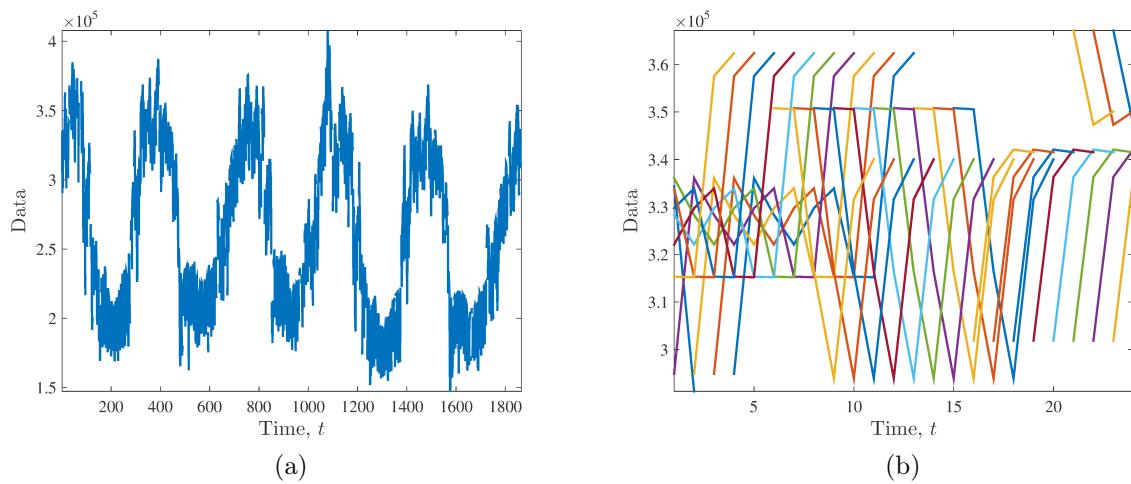


Рис. 5: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.01 (b) Periods of electricity time series missing.value.train.0.01

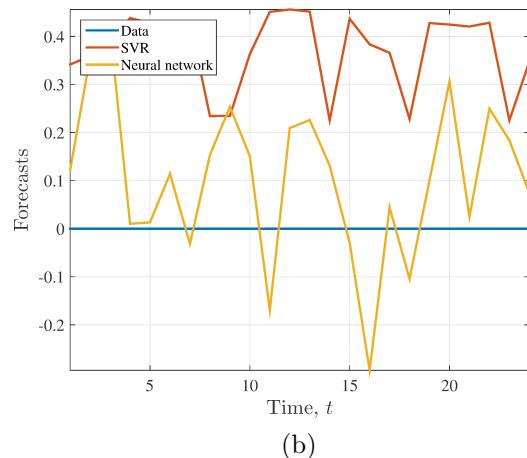
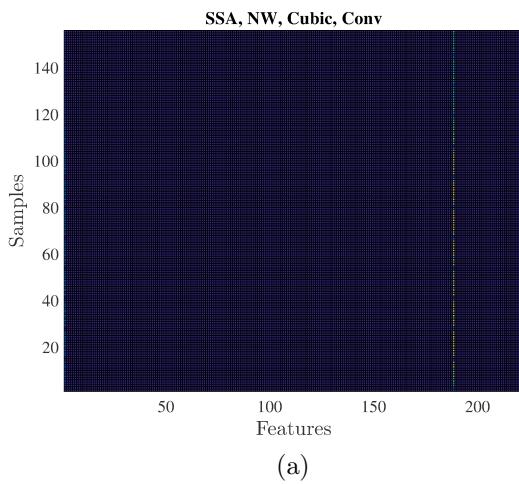


Рис. 6: (a) Feature generation results for `generation.missing.value.train.0.01.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.01.png`. VAR, SVR, Neural network

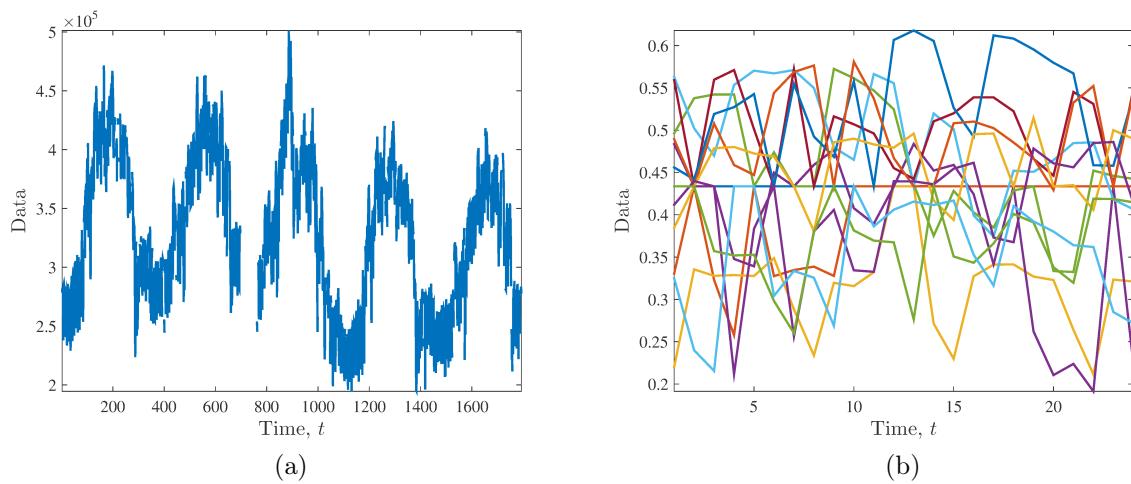


Рис. 7: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.01 (b) Periods of electricity time series missing.value.test.0.01

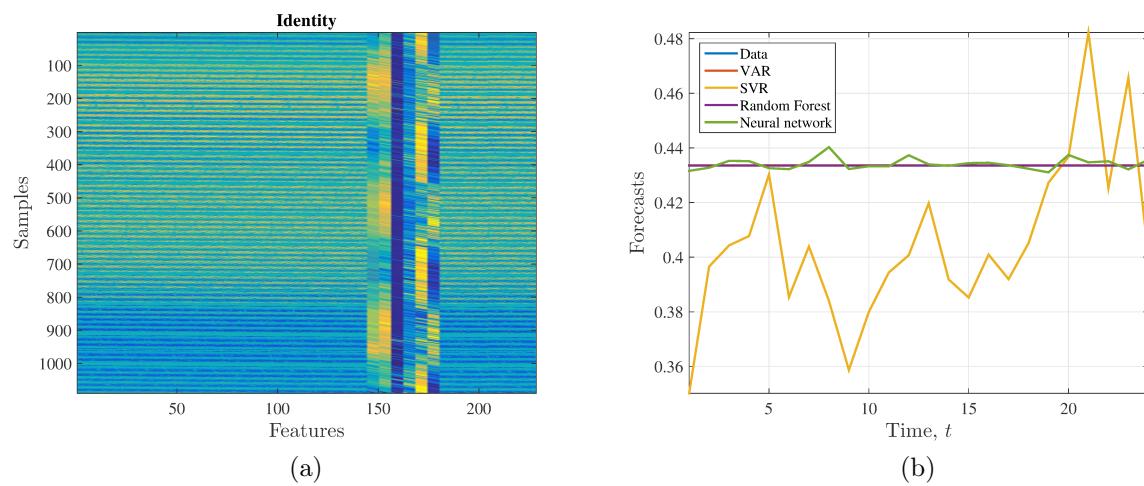


Рис. 8: (a) Feature generation results for `generation.missing.value.test.0.01.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.01.png`. VAR, SVR, Neural network

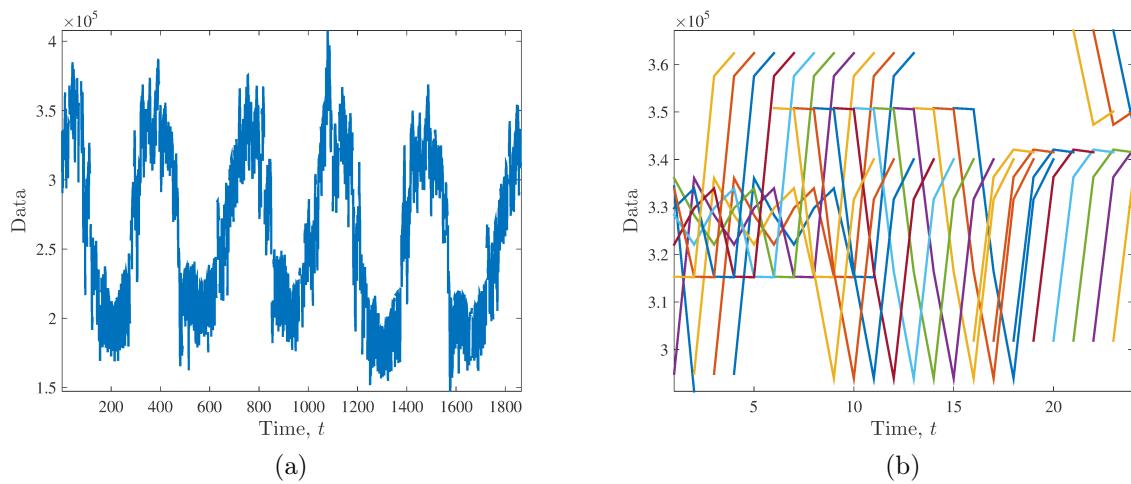


Рис. 9: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.03 (b) Periods of electricity time series missing.value.train.0.03

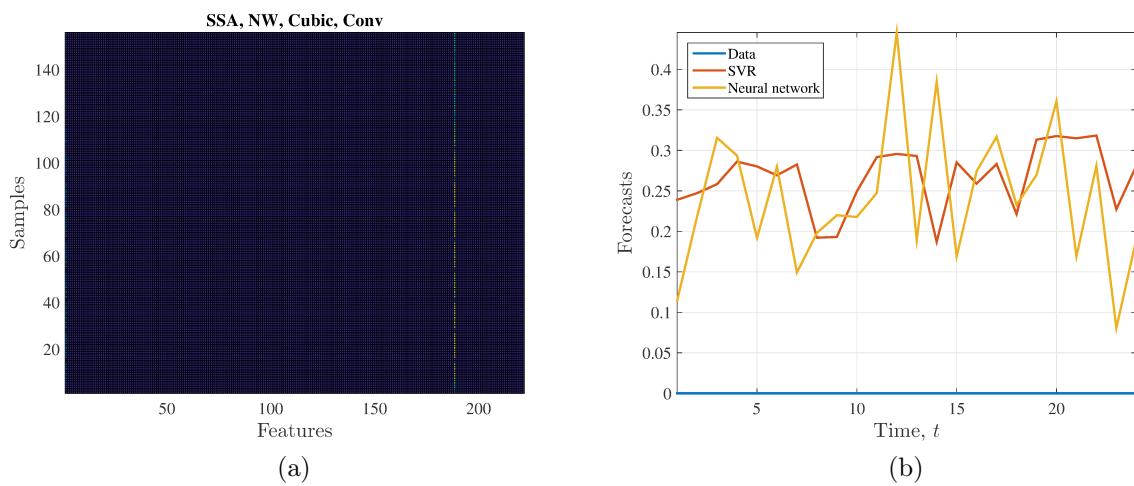


Рис. 10: (a) Feature generation results for `generation.missing.value.train.0.03.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.03.png`. VAR, SVR, Neural network

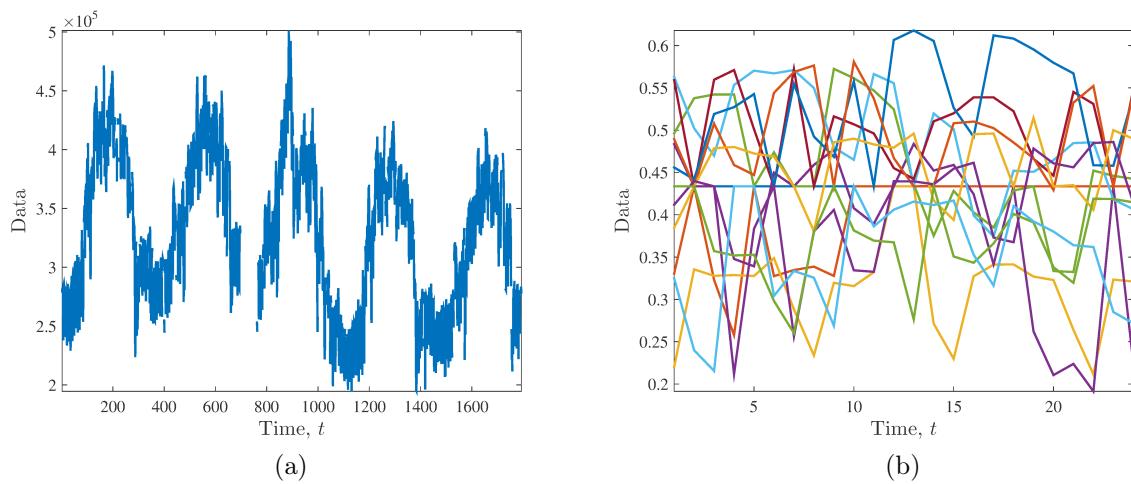


Рис. 11: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.03 (b) Periods of electricity time series missing.value.test.0.03

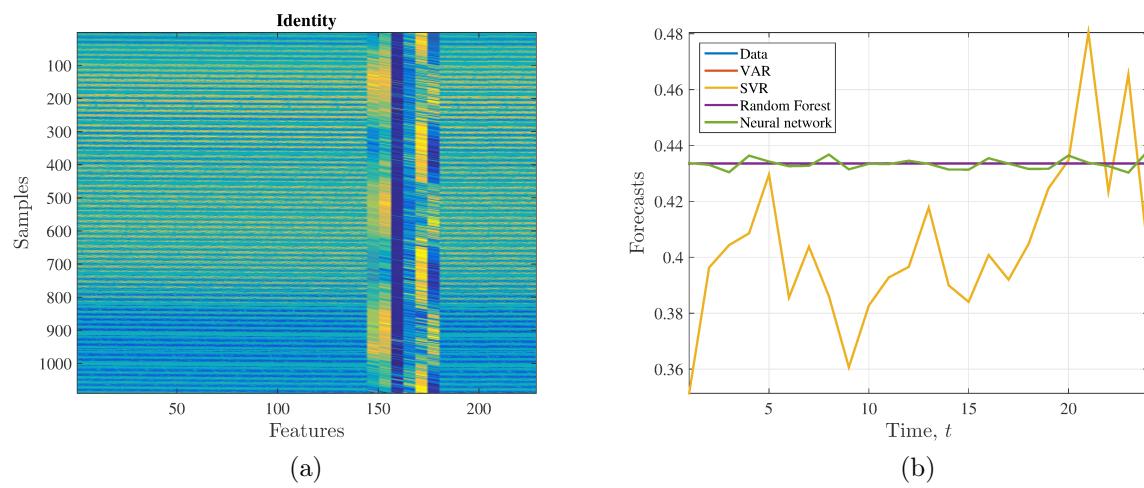


Рис. 12: (a) Feature generation results for `generation.missing.value.test.0.03.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.03.png`. VAR, SVR, Neural network

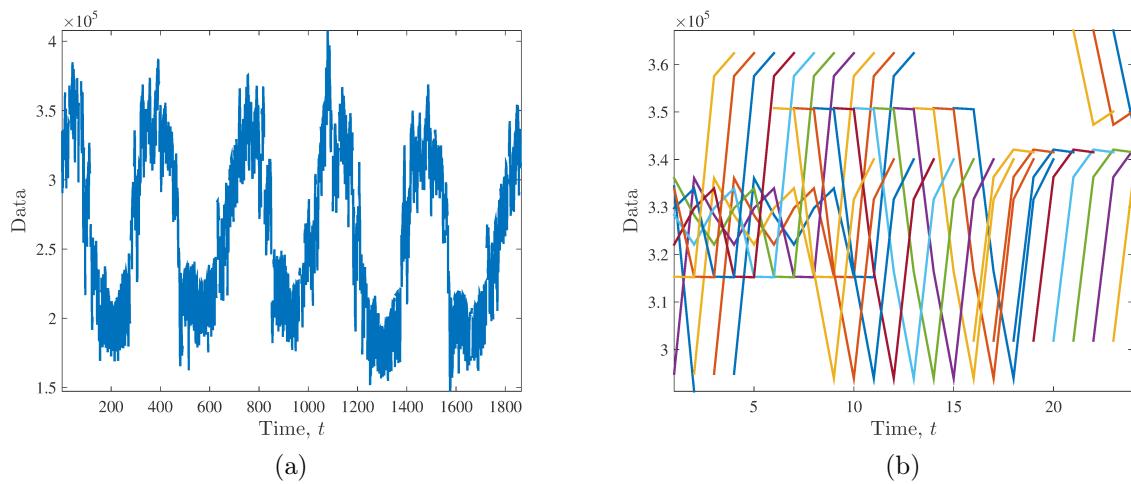


Рис. 13: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.05 (b) Periods of electricity time series missing.value.train.0.05

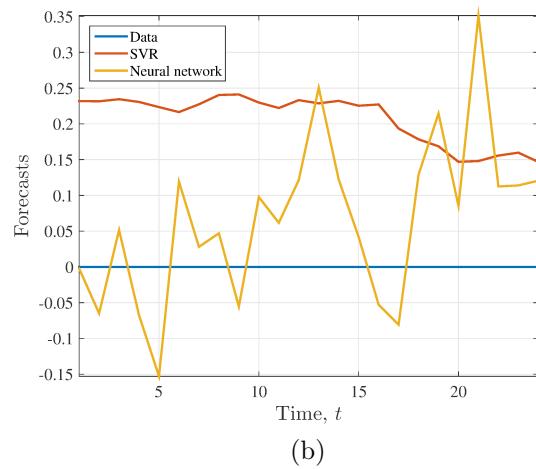
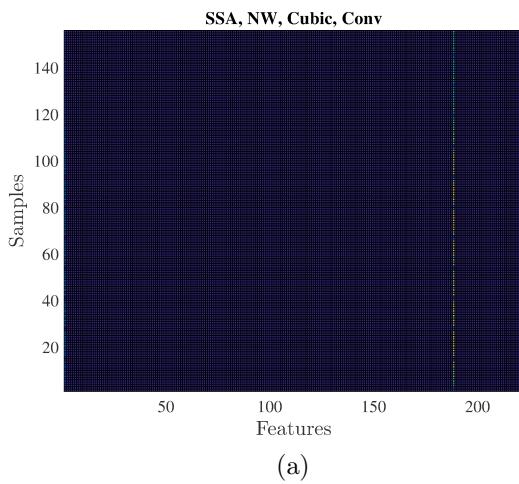


Рис. 14: (a) Feature generation results for `generation.missing.value.train.0.05.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.05.png`. VAR, SVR, Neural network

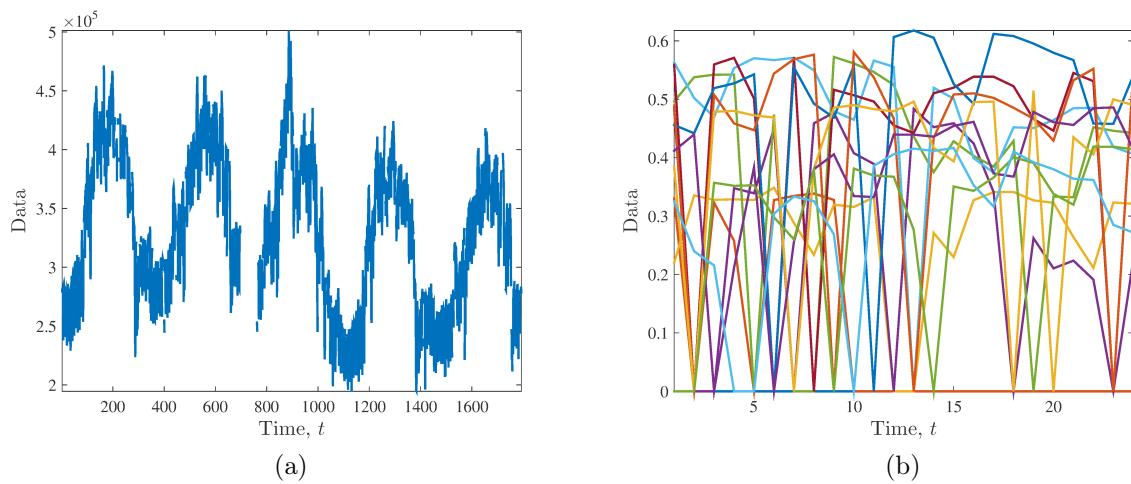


Рис. 15: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.05 (b) Periods of electricity time series missing.value.test.0.05

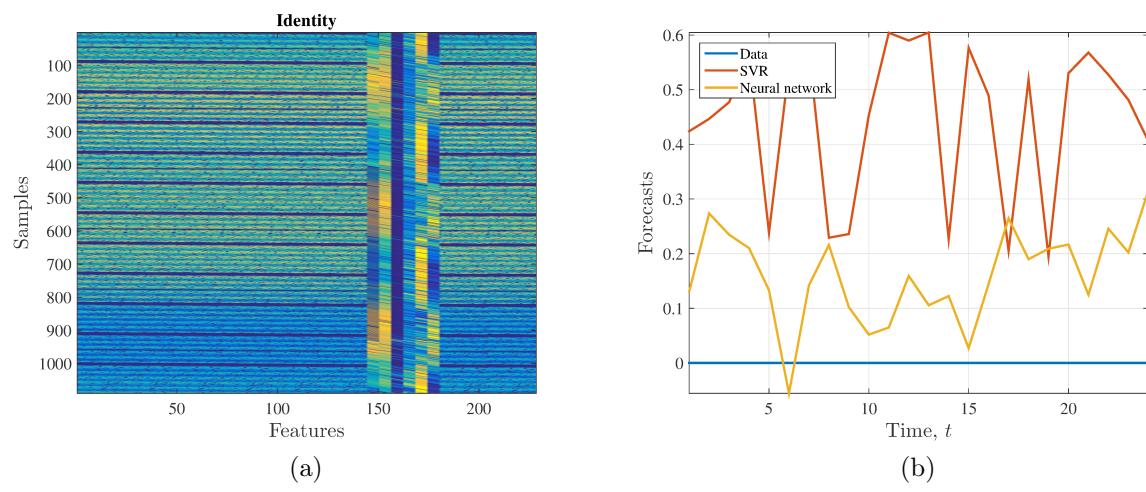


Рис. 16: (a) Feature generation results for `generation.missing.value.test.0.05.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.05.png`. VAR, SVR, Neural network

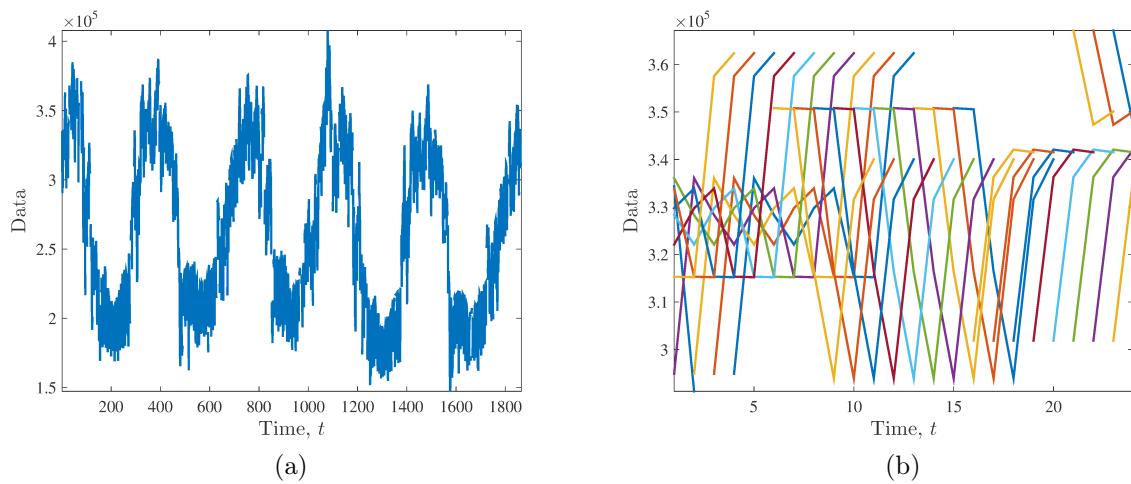


Рис. 17: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.1 (b) Periods of electricity time series missing.value.train.0.1

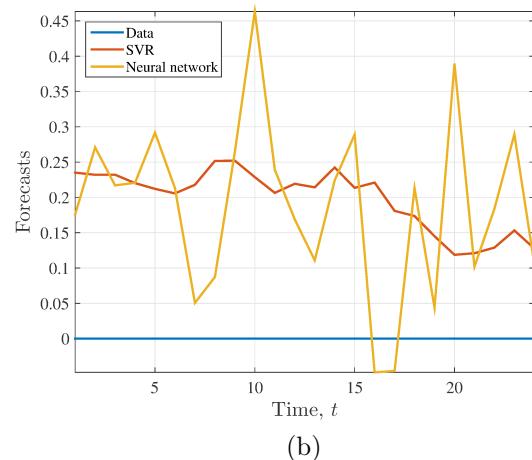
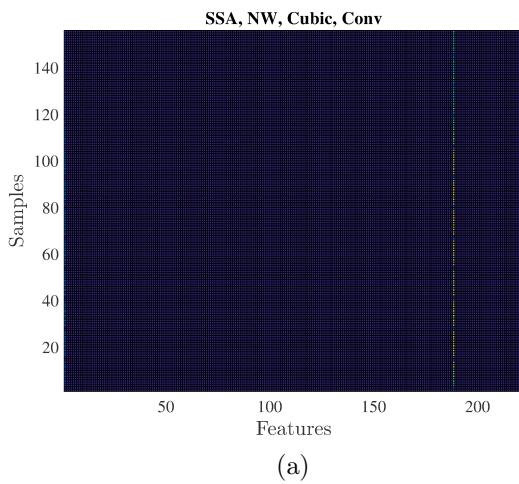


Рис. 18: (a) Feature generation results for `generation.missing.value.train.0.1.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.1.png`. VAR, SVR, Neural network

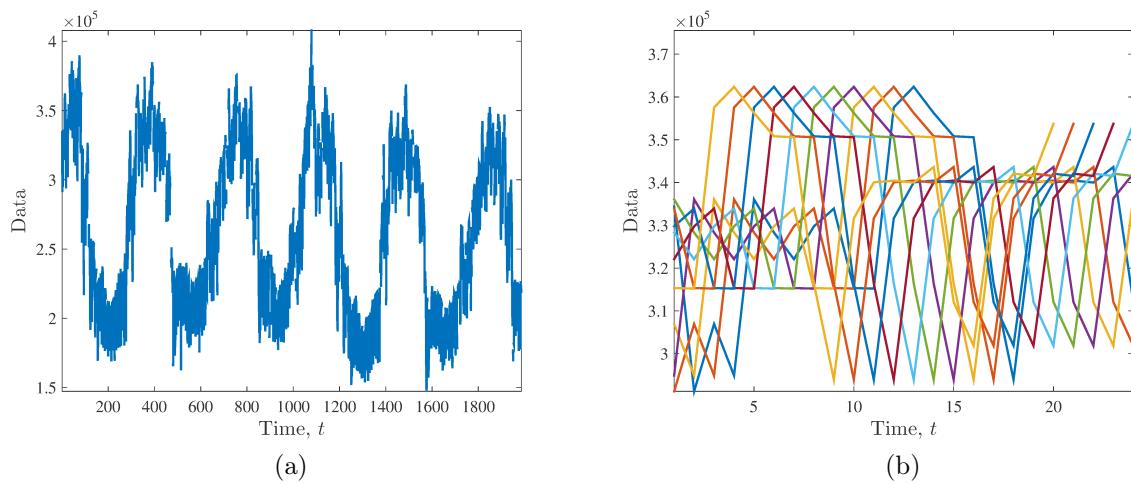


Рис. 19: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.1 (b) Periods of electricity time series missing.value.test.0.1

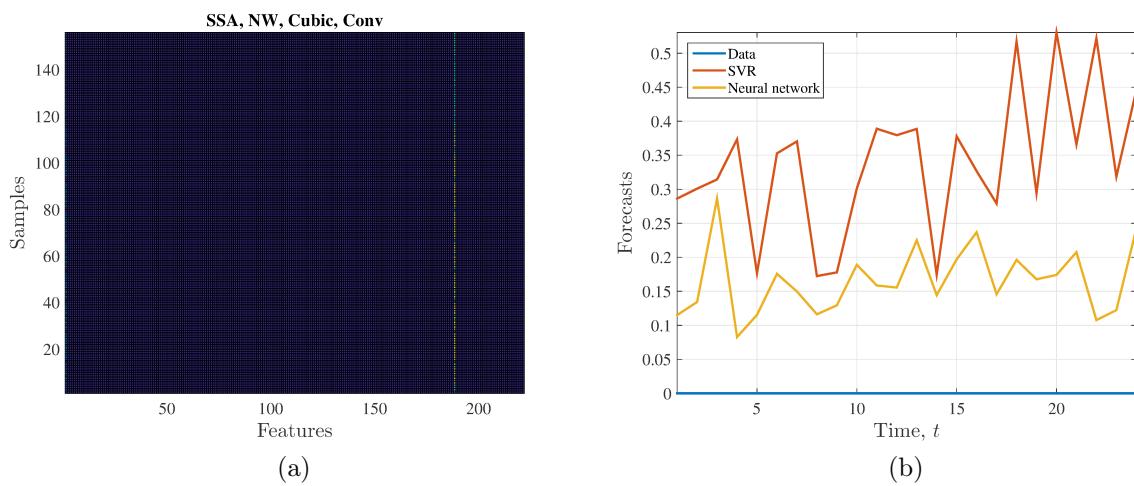


Рис. 20: (a) Feature generation results for `generation.missing.value.test.0.1.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.1.png`. VAR, SVR, Neural network

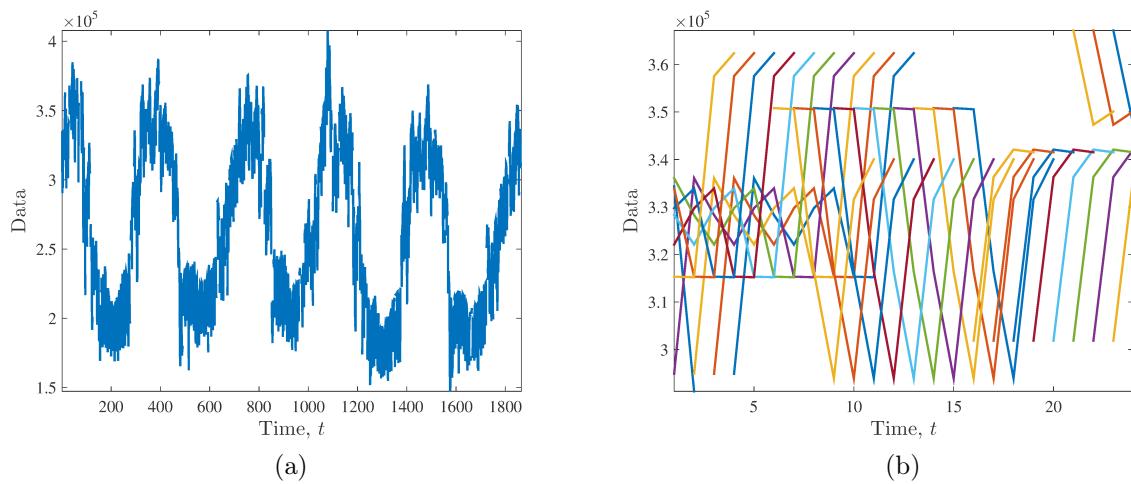


Рис. 21: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.01 (b) Periods of electricity time series missing.value.train.0.01

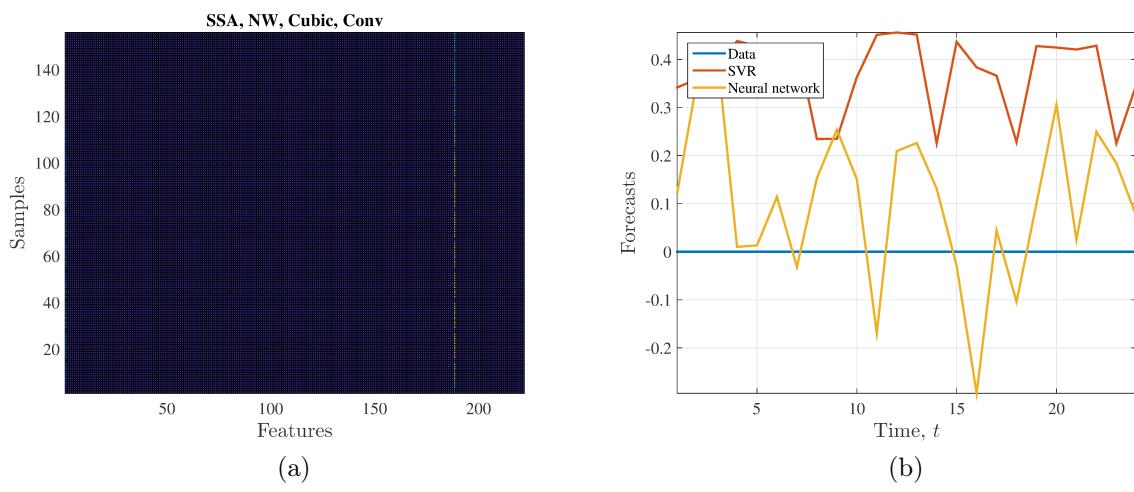


Рис. 22: (a) Feature generation results for `generation.missing.value.train.0.01.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.01.png`. VAR, SVR, Neural network

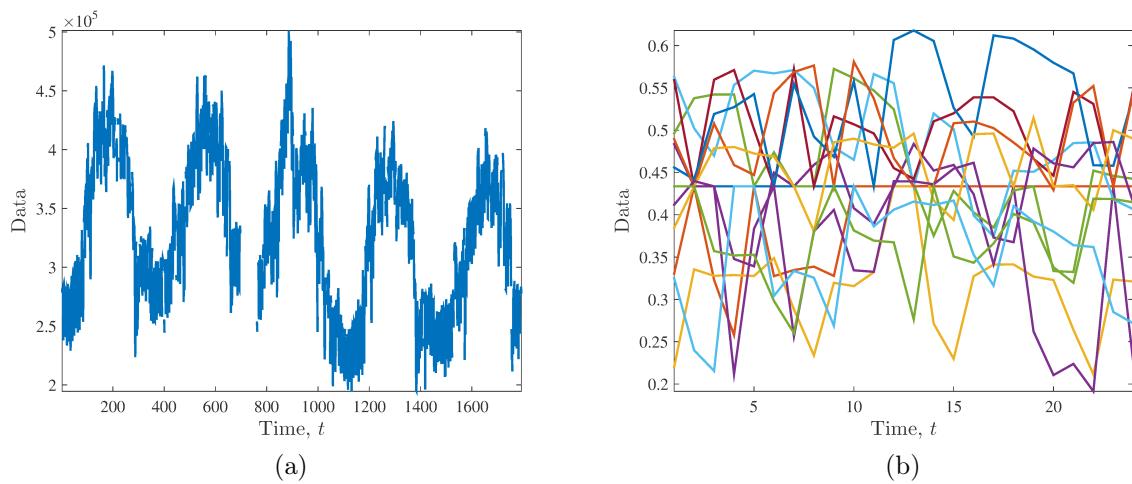


Рис. 23: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.01 (b) Periods of electricity time series missing.value.test.0.01

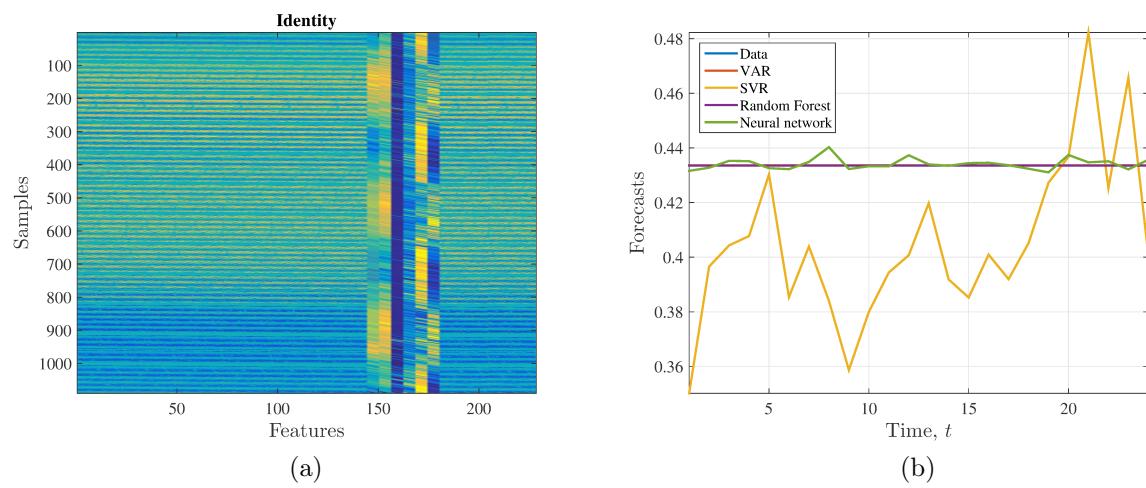


Рис. 24: (a) Feature generation results for `generation.missing.value.test.0.01.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.01.png`. VAR, SVR, Neural network

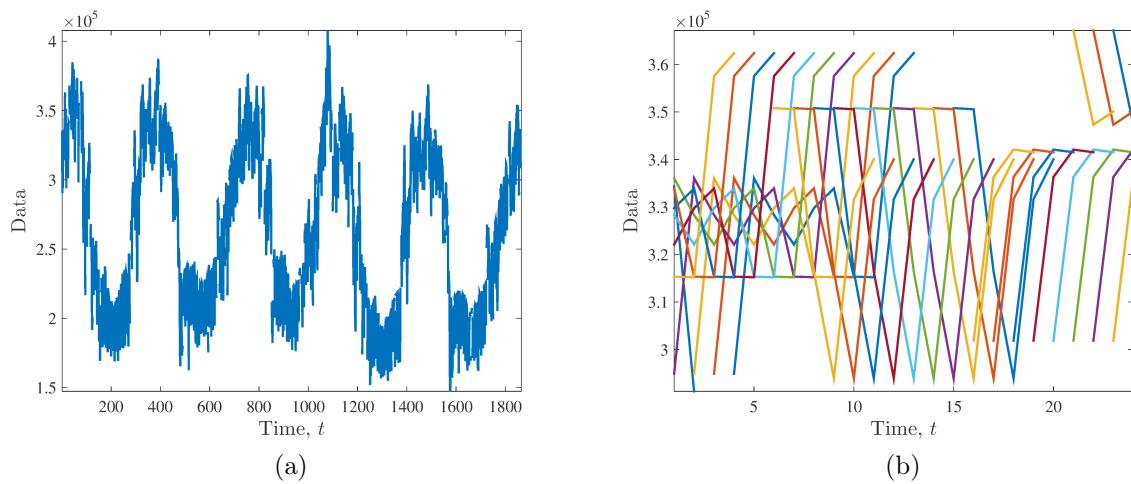


Рис. 25: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.03 (b) Periods of electricity time series missing.value.train.0.03

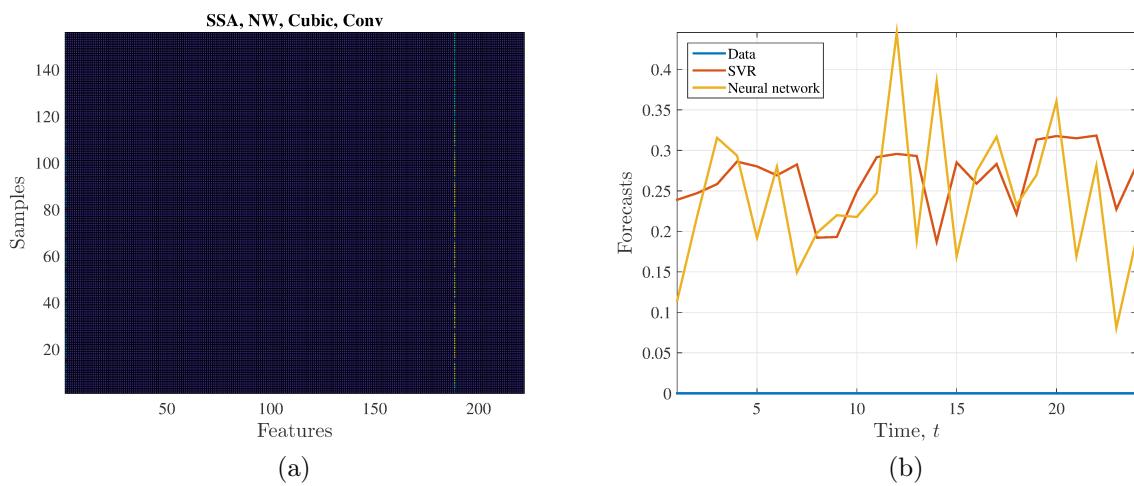


Рис. 26: (a) Feature generation results for `generation.missing.value.train.0.03.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.03.png`. VAR, SVR, Neural network

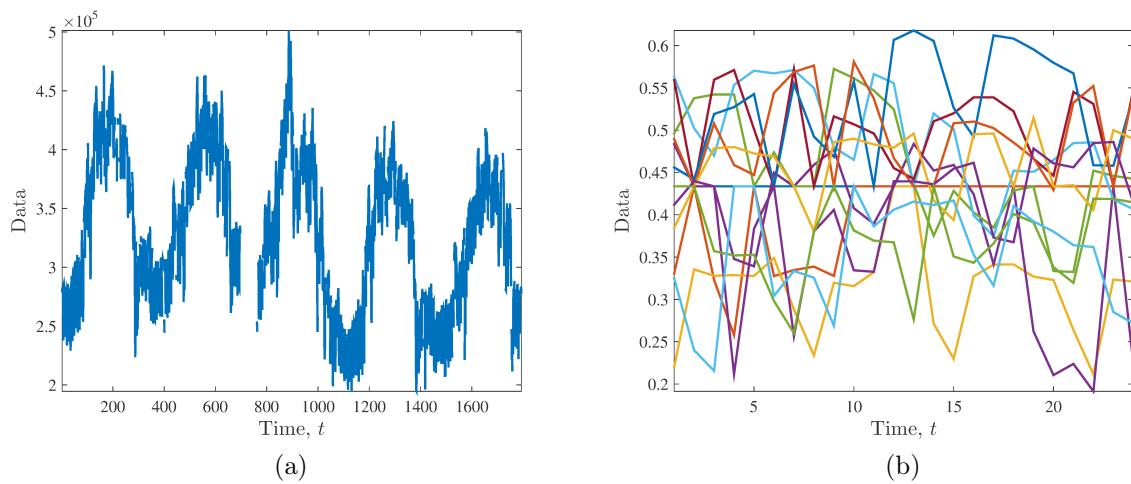


Рис. 27: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.03 (b) Periods of electricity time series missing.value.test.0.03

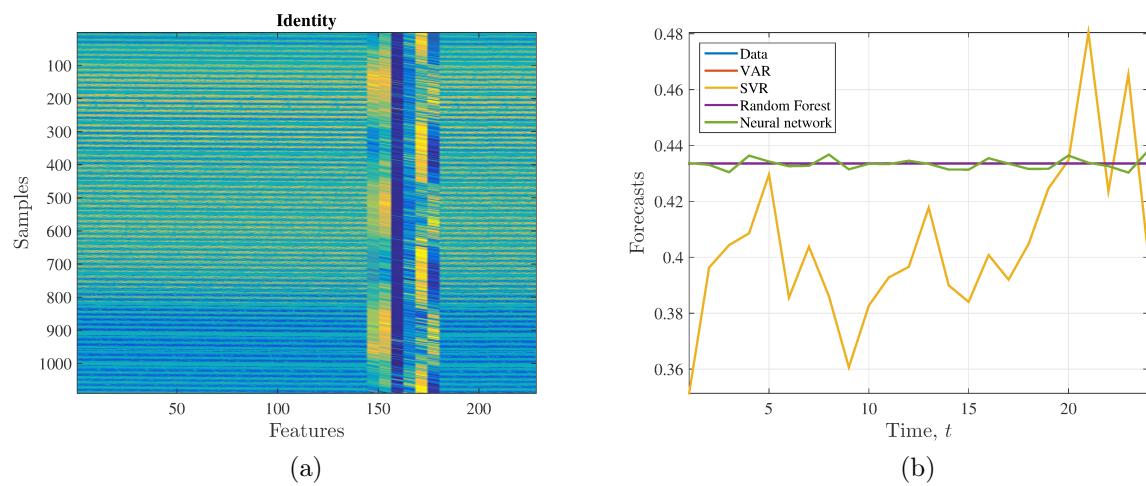


Рис. 28: (a) Feature generation results for `generation.missing.value.test.0.03.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.03.png`. VAR, SVR, Neural network

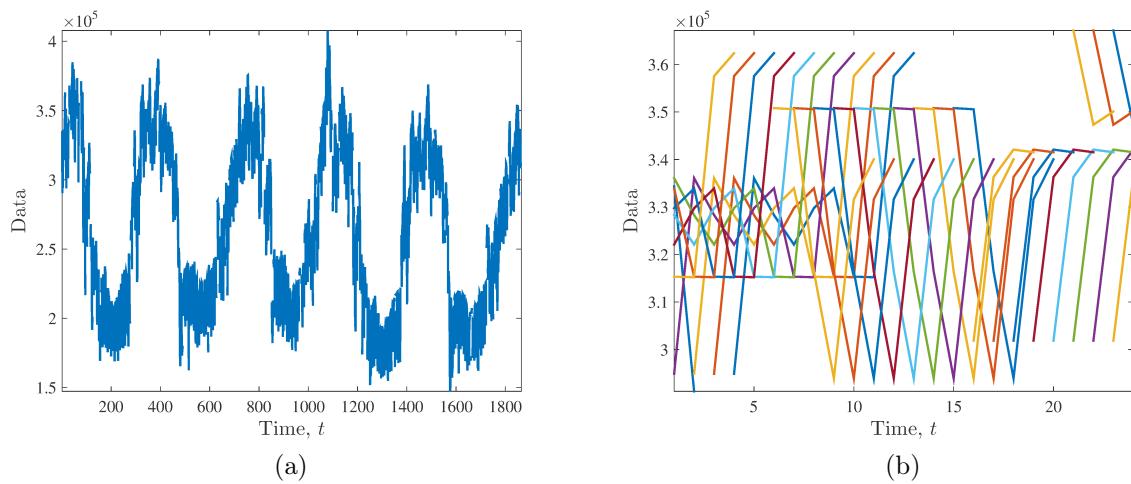


Рис. 29: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.05 (b) Periods of electricity time series missing.value.train.0.05

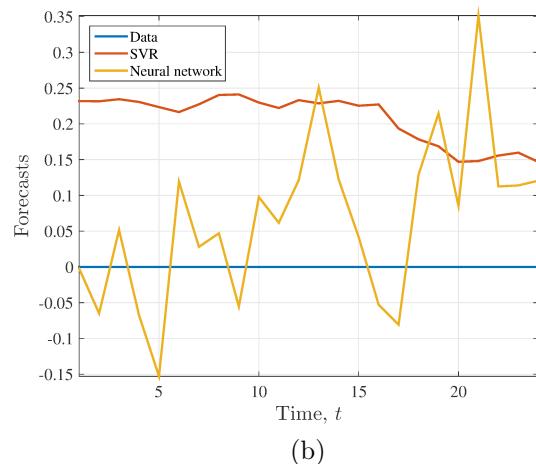
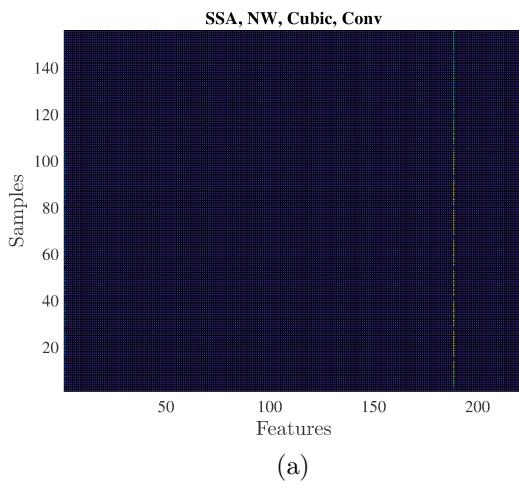


Рис. 30: (a) Feature generation results for `generation.missing.value.train.0.05.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.train.0.05.png`. VAR, SVR, Neural network

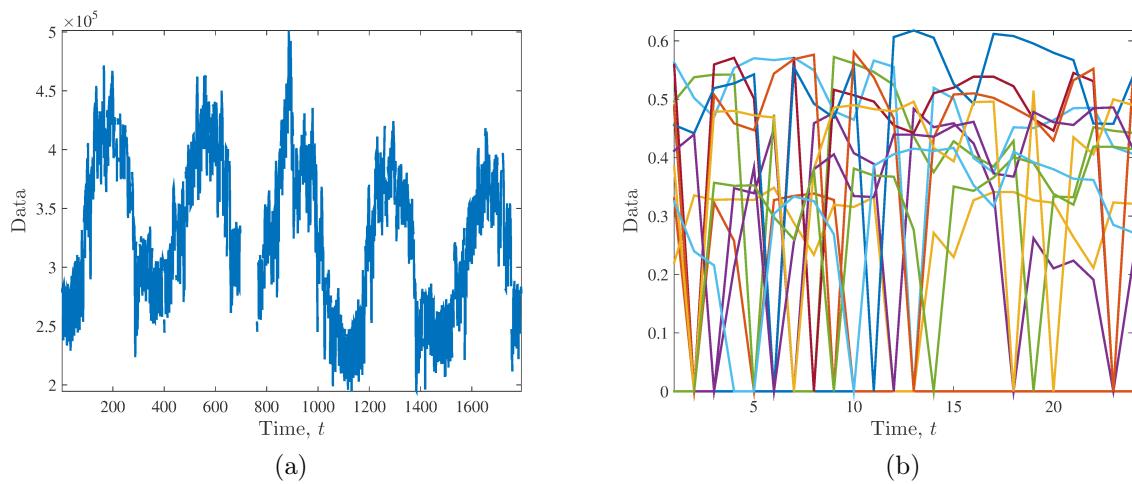


Рис. 31: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.05 (b) Periods of electricity time series missing.value.test.0.05

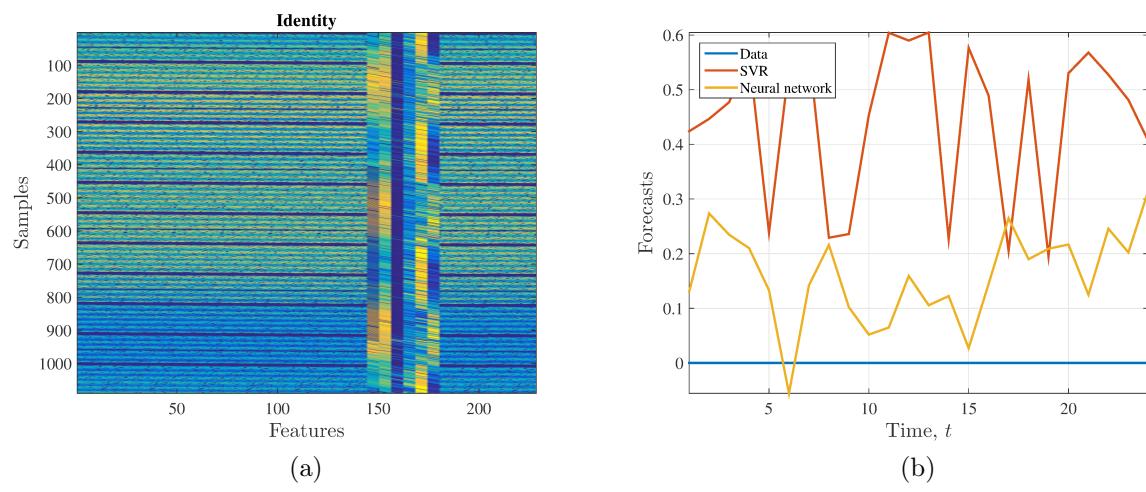


Рис. 32: (a) Feature generation results for `generation.missing.value.test.0.05.png`. SSA, NW, Cubic, Conv (b) Forecasting results for `res.missing.value.test.0.05.png`. VAR, SVR, Neural network

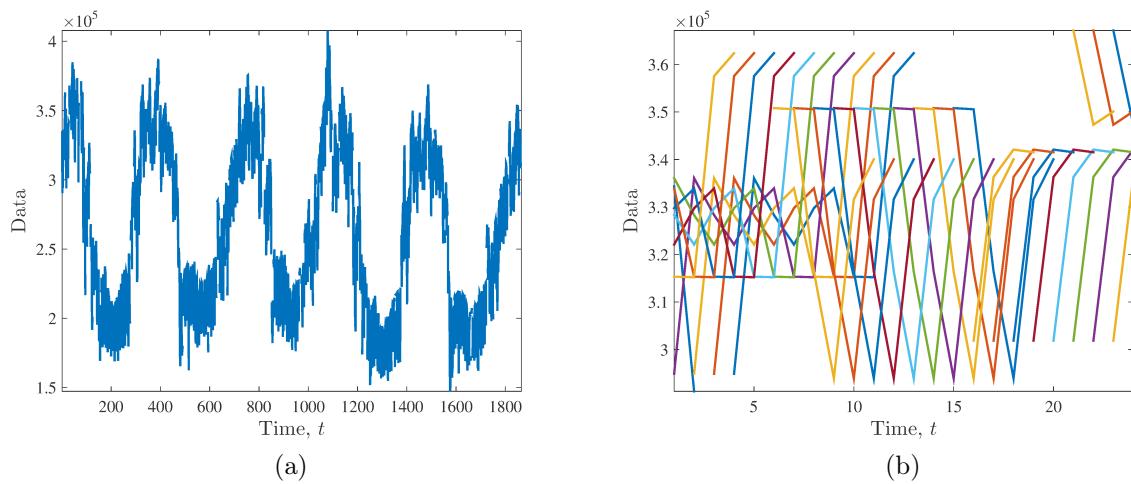
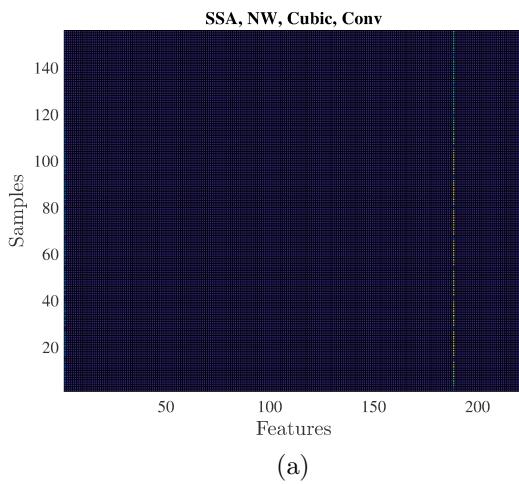
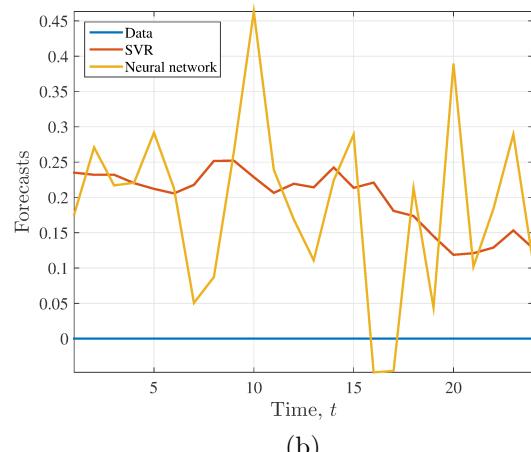


Рис. 33: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.train.0.1 (b) Periods of electricity time series missing.value.train.0.1



(a)



(b)

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

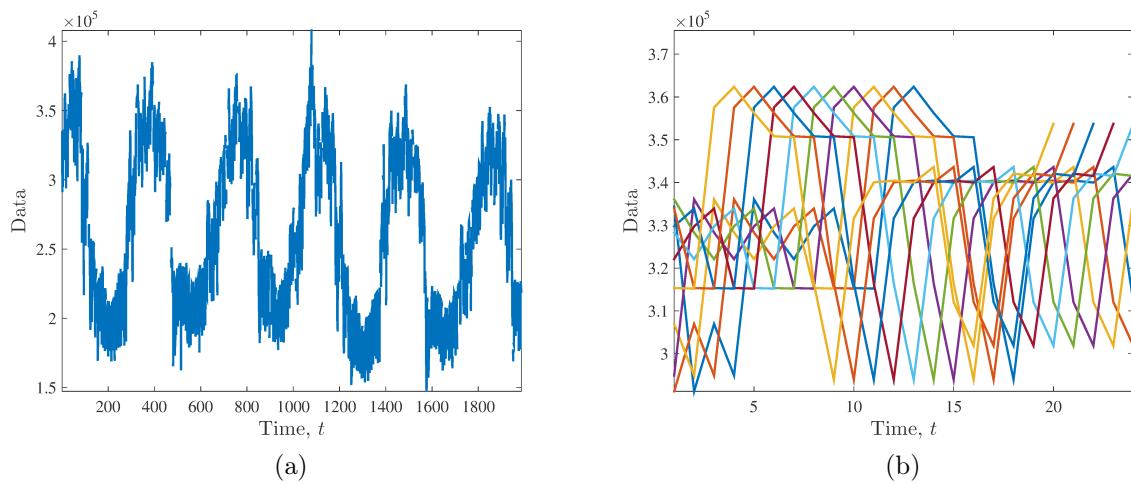


Рис. 35: Energy-weather time series with artificially inserted missing values (a) Target time series missing.value.test.0.1 (b) Periods of electricity time series missing.value.test.0.1

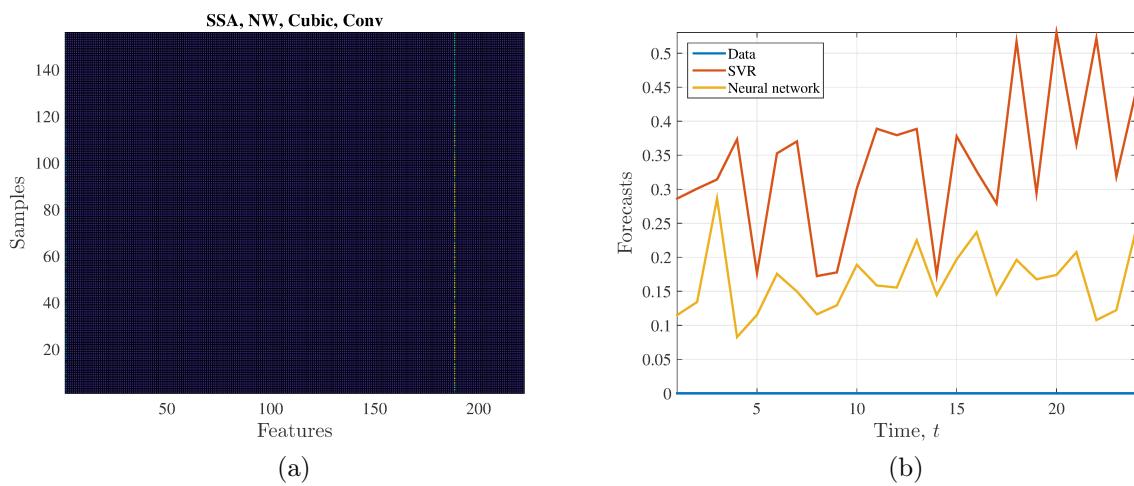


Рис. 36: (а) Feature generation results for `generation.missing.value.test.0.1.png`. SSA, NW, Cubic, Conv (б) Forecasting results for `res.missing.value.test.0.1.png`. VAR, SVR, Neural network