

Рис. 1: (a) Accelerometry time series from HASC project Target time series HASC1001.
 (b) Target segments of the time series HASC1001.

Feature set	Models	MAPE test	MAPE train	AIC
History	VAR	7.215	0.067	1427.927
	SVR	0.718	0.320	1396.463
	Random Forest	0.463	0.206	1388.668
	Neural network	0.624	0.407	1389.319
SSA	VAR	0.755	0.402	1375.959
	SVR	1.348	0.434	1401.053
	Random Forest	0.746	0.335	1413.181
	Neural network	0.544	0.387	1379.299
Cubic	VAR	0.562	0.382	1371.387
	SVR	0.779	0.418	1373.299
	Random Forest	0.647	0.320	1412.390
	Neural network	0.795	0.387	1371.354
Conv	VAR	2.182	2.180	2252.866
	SVR	2.986	0.537	1413.103
	Random Forest	0.583	0.323	1408.932

	Neural network	0.743	0.406	1373.955
NW	VAR	2.021	0.041	1605.095
	SVR	0.714	0.323	1398.156
	Random Forest	0.427	0.195	1381.996
	Neural network	0.815	0.425	1389.418
All	VAR	2.000	2.000	9910.259
	SVR	0.751	0.324	1395.951
	Random Forest	0.415	0.194	1381.906
	Neural network	1.254	0.399	1381.405
PCA	VAR	0.712	0.310	1388.756
	SVR	0.748	0.323	1395.828
	Random Forest	0.504	0.214	1378.500
	Neural network	0.563	0.392	1377.608

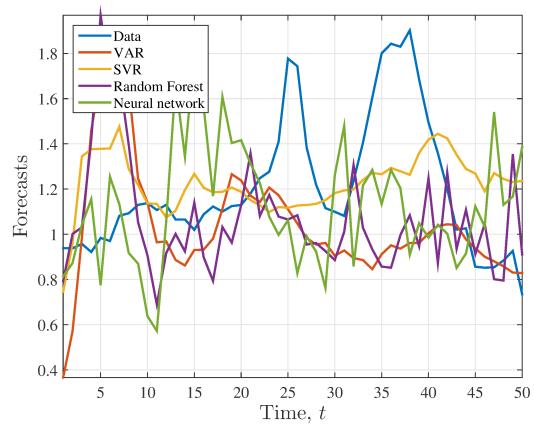
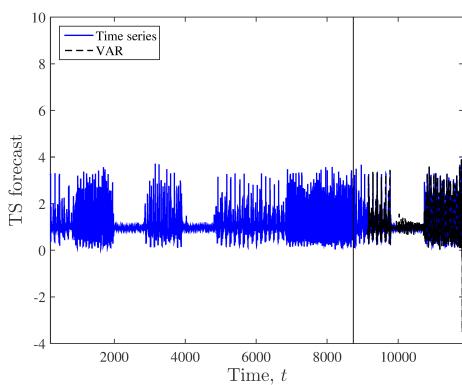
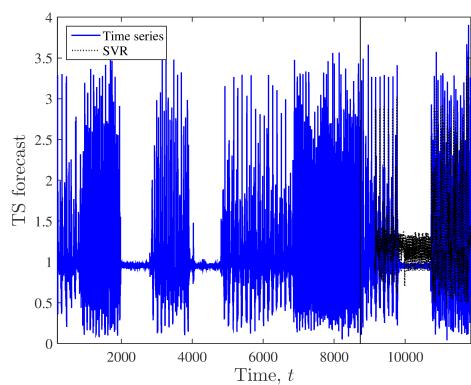


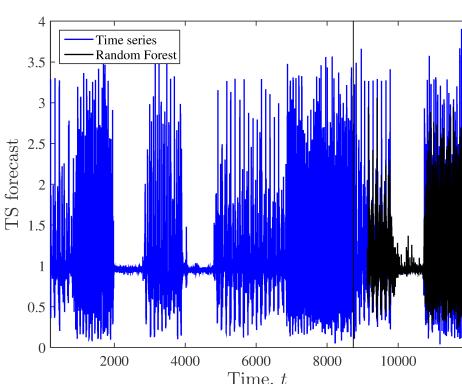
Рис. 2: Forecasting results for HASC1001. VAR, SVR, Random Forest, Neural network



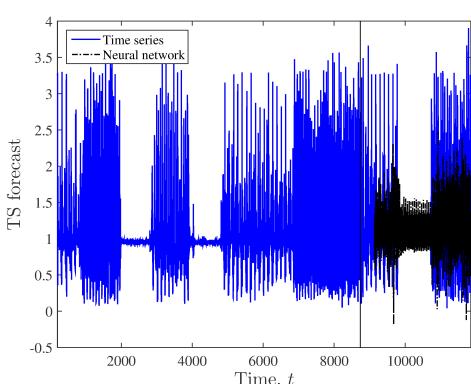
(a)



(b)

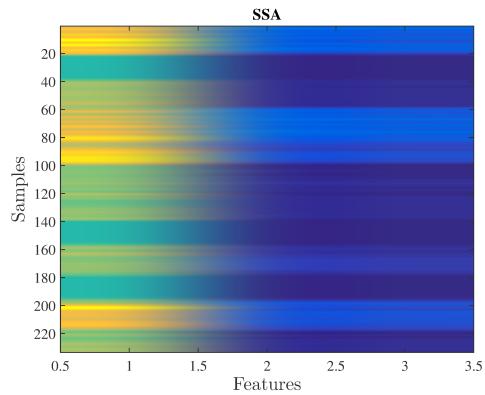


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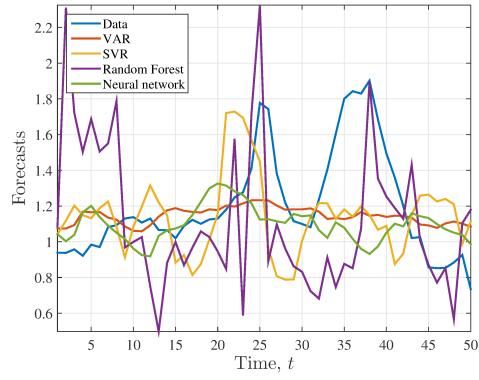


(d)

Fig. 3: (a) Forecasting results for HASC1001, 4 VAR. (b) Forecasting results for HASC1001, SVR. (c) Forecasting results for HASC1001, Random Forest. (d) Forecasting results for HASC1001, Neural network.

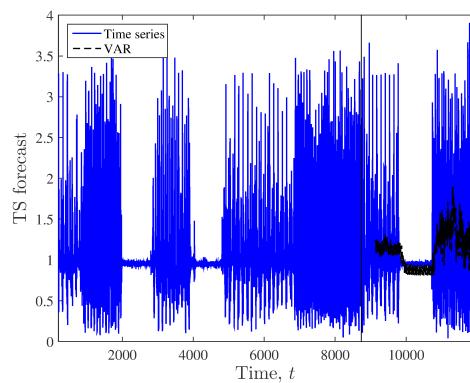


(a)

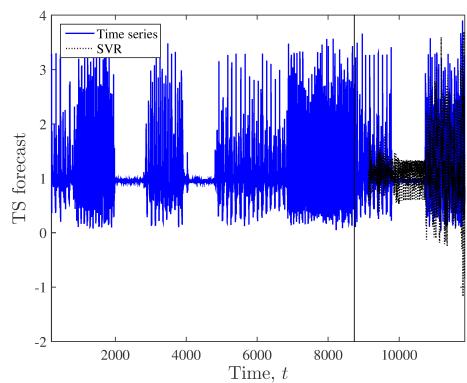


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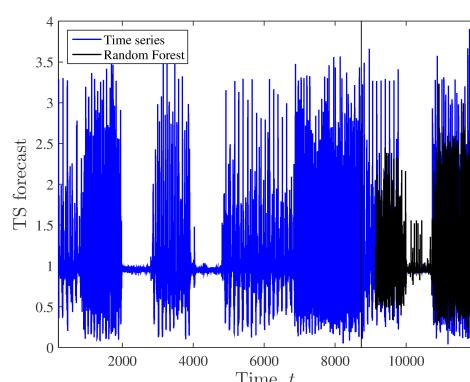
Рис. 4: (a) Feature generation results for HASC1001. SSA (b) Forecasting results for HASC1001. VAR, SVR, Random Forest, Neural network



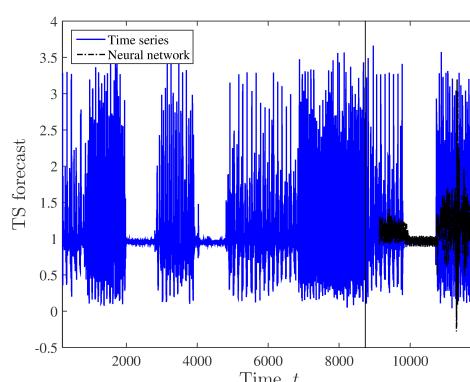
(a)



(b)



(c)



(d)

Fig. 5: (a) Forecasting results for HASC1001, ⁶VAR. (b) Forecasting results for HASC1001, SVR. (c) Forecasting results for HASC1001, Random Forest. (d) Forecasting results for HASC1001, Neural network.

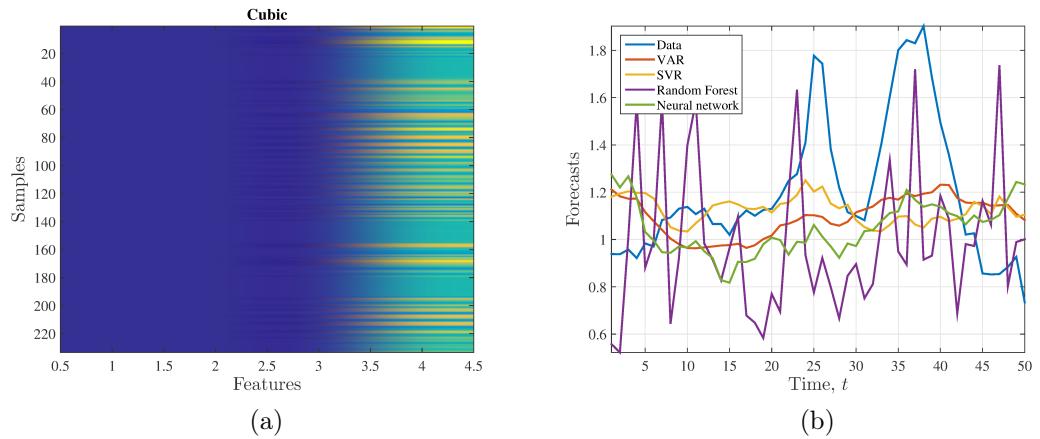
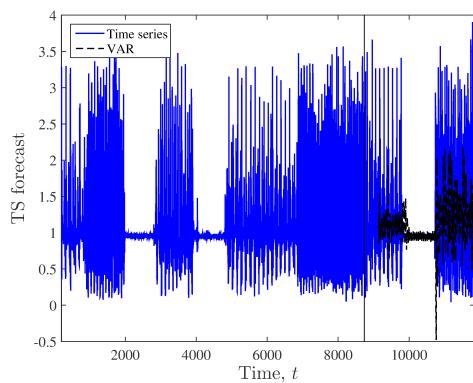
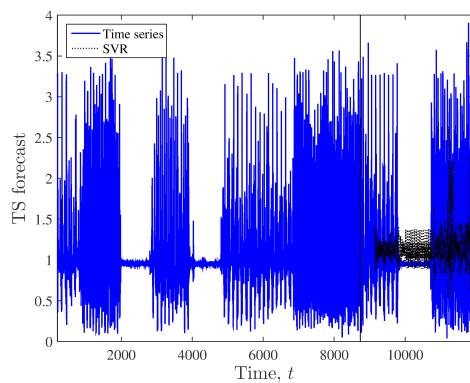


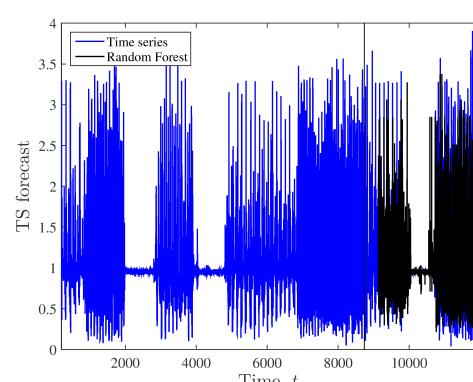
Рис. 6: (a) Feature generation results for HASC1001. Cubic (b) Forecasting results for HASC1001. VAR, SVR, Random Forest, Neural network



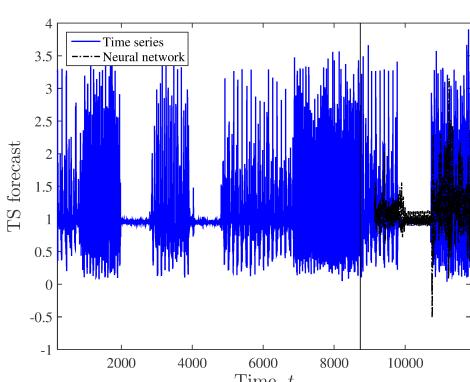
(a)



(b)

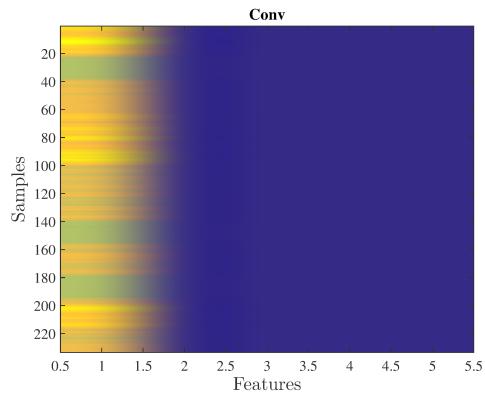


(c)

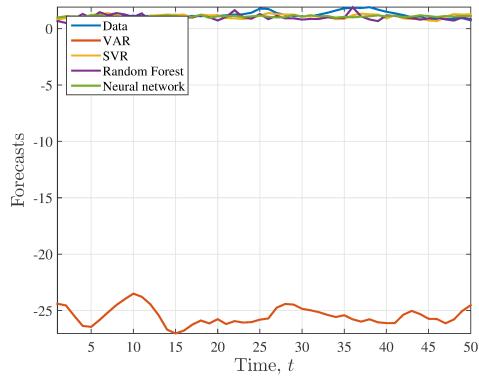


(d)

Fig. 7: (a) Forecasting results for HASC1001, VAR. (b) Forecasting results for HASC1001, SVR. (c) Forecasting results for HASC1001, Random Forest. (d) Forecasting results for HASC1001, Neural network.

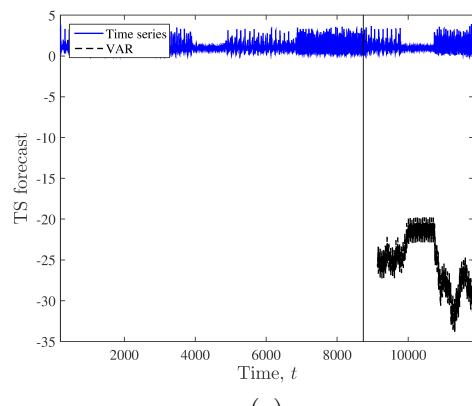


(a)

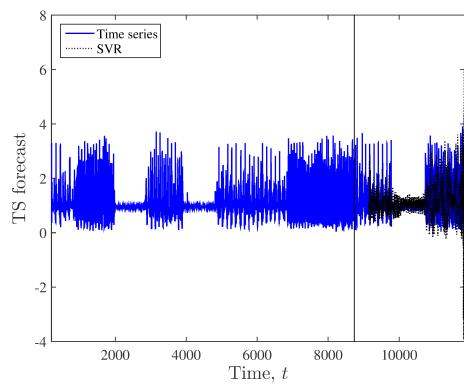


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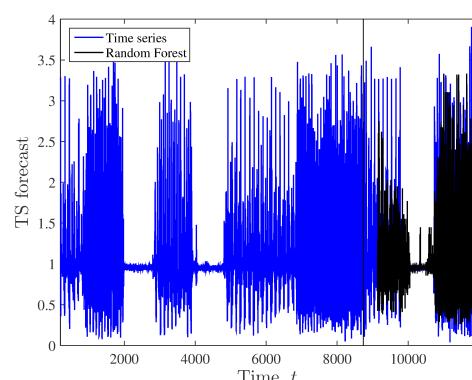
Рис. 8: (a) Feature generation (Conv) results for HASC1001. Conv (b) Forecasting results for HASC1001. VAR, SVR, Random Forest, Neural network



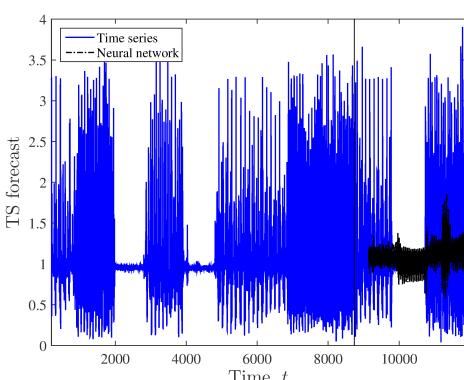
(a)



(b)

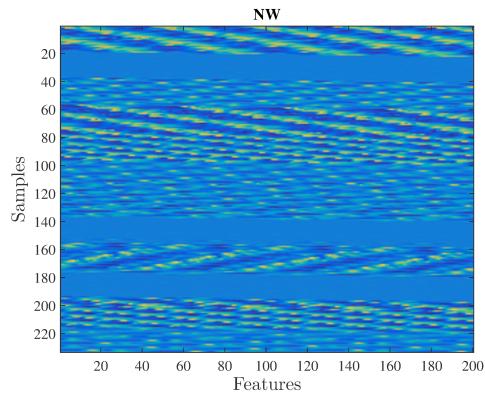


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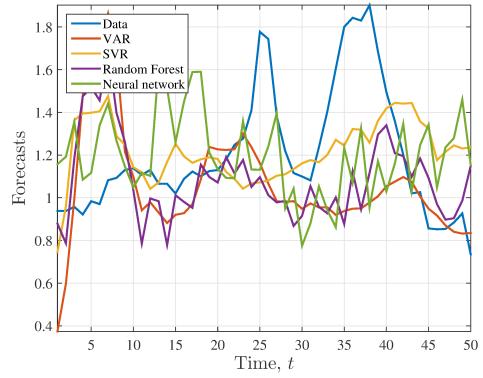


(d)

Рис. 9: (a) Forecasting results for HASC1001¹⁰, VAR. (b) Forecasting results for HASC1001, SVR. (c) Forecasting results for HASC1001, Random Forest. (d) Forecasting results for HASC1001, Neural network

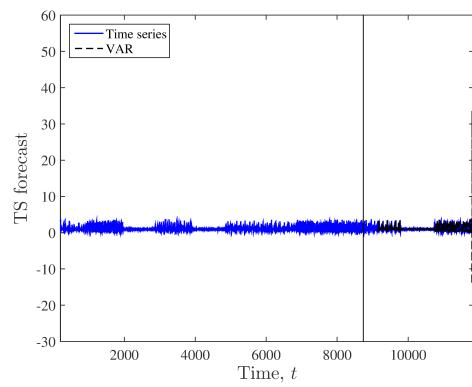


(a)

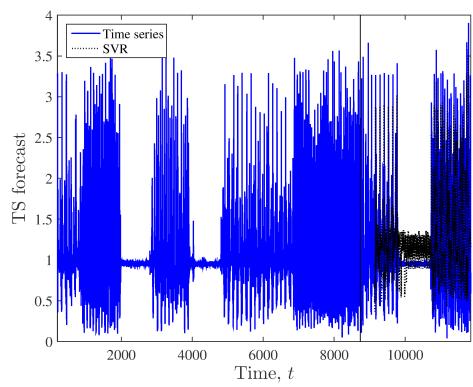


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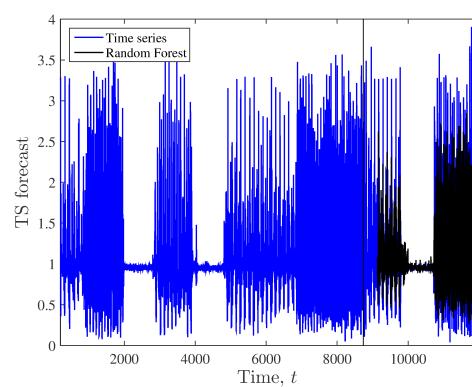
Рис. 10: (a) Feature generation results for HASC1001, NW. NW (b) Forecasting results for HASC1001. VAR, SVR, Random Forest, Neural network



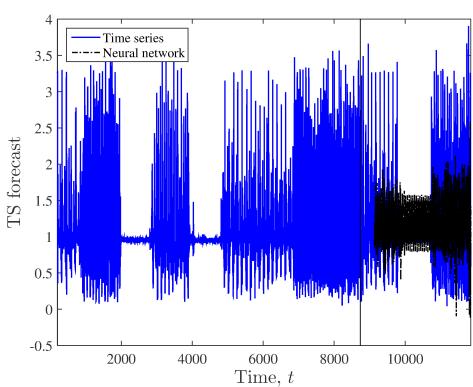
(a)



(b)



(c)



(d)

Рис. 11: (а) Forecasting results for HASC1001¹², VAR. (б) Forecasting results for HASC1001, SVR. (в) Forecasting results for HASC1001, Random Forest. (г) Forecasting results for HASC1001, Neural network

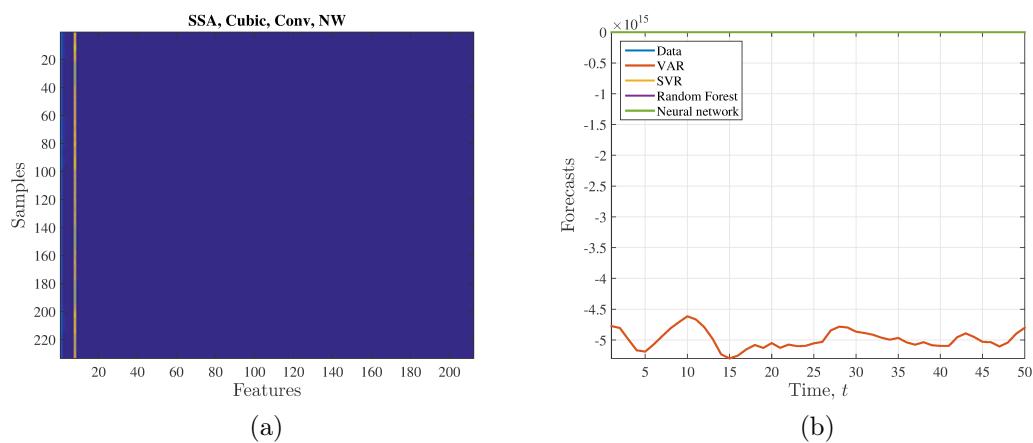
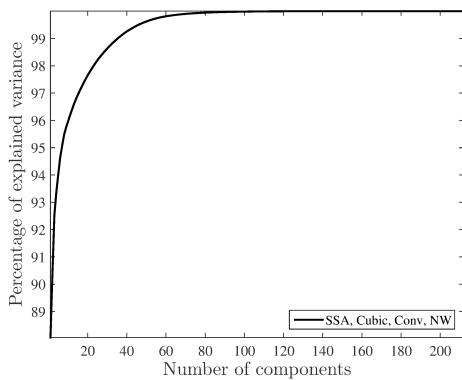
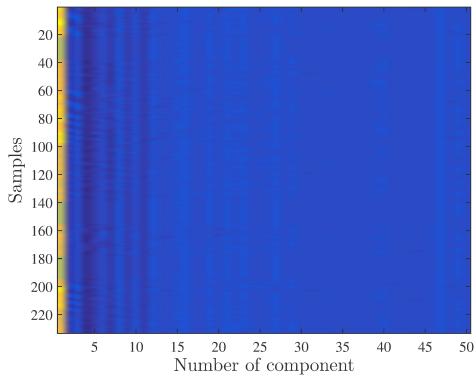


Рис. 12: (a) Feature generation results for HASC1001. SSA, Cubic, Conv, NW (b) Forecasting results for HASC1001. VAR, SVR, Random Forest, Neural network

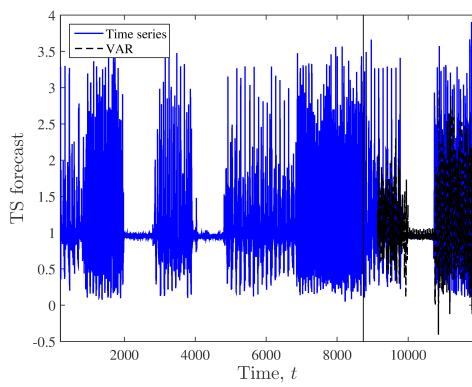


(a)

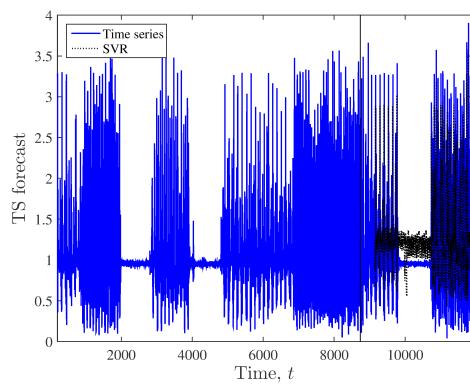


(b)

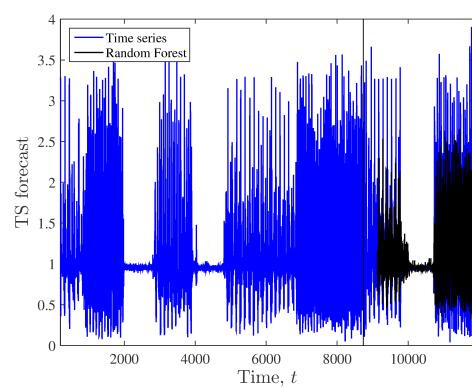
Рис. 13: (a) Dimensionality reduction with PCA for HASC1001, SSA, Cubic, Conv, NW.
 (b) Features reduced with PCA for HASC1001, SSA, Cubic, Conv, NW.



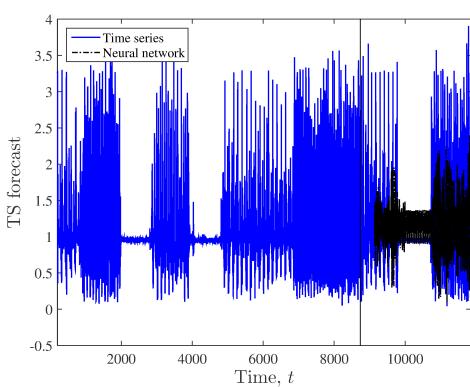
(a)



(b)



(c)



(d)

Fig. 14: (a) Forecasting results for HASC1001¹⁵, VAR. (b) Forecasting results for HASC1001, SVR. (c) Forecasting results for HASC1001, Random Forest. (d) Forecasting results for HASC1001, Neural network