

A. Experiments with Real-World Data

In this section we provide some preliminary results on real data time series, and show that for such data as well, our online learning approach is reasonably effective compared to existing approaches. For robustness, we consider time series from different fields: the first is the weekly closing rate of interest rate swaps; the second is the daily closing rates of the S&P 500 volatility (Vix), and the third is the monthly average temperature of the sea surface, measured at a specific point. The results are presented in Figure 2 and Table 2 in the same manner as in the synthetic data section.

Online Time Series Prediction with Missing Data

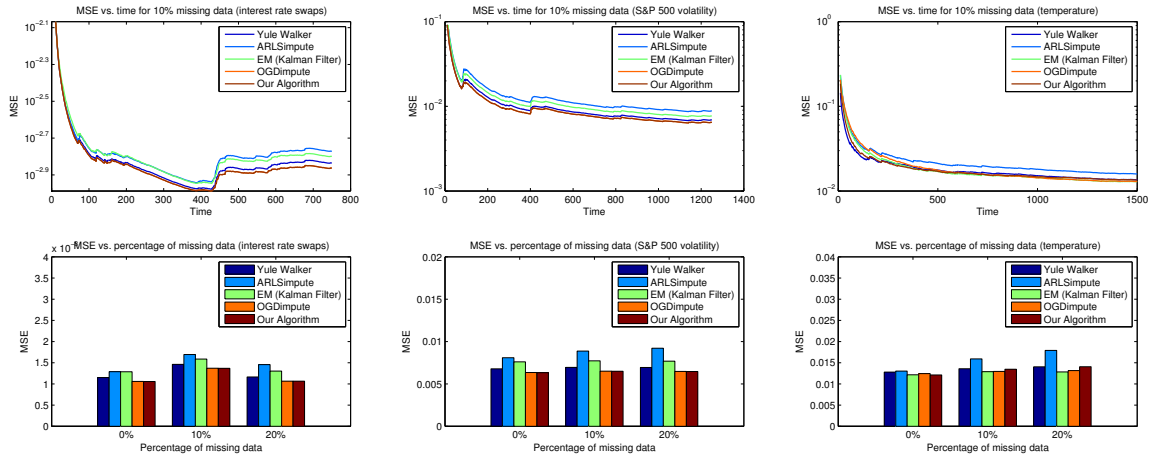


Figure 2. Experimental results for real-world data.

	interest rate swaps			S&P 500 volatility			temperature		
	0%	10%	20%	0%	10%	20%	0%	10%	20%
Yule-Walker	0.0012	0.0012	0.0012	0.0068	0.0070	0.0069	0.0128	0.0136	0.0140
ARLSIMPUTE	0.0013	0.0014	0.0015	0.0081	0.0089	0.0092	0.0130	0.0159	0.0179
EM (Kalman filter)	0.0013	0.0013	0.0013	0.0076	0.0077	0.0077	0.0122	0.0129	0.0128
OGDIMPUTE	0.0011	0.0011	0.0011	0.0063	0.0065	0.0065	0.0124	0.0129	0.0131
Our algorithm	0.0011	0.0011	0.0011	0.0063	0.0065	0.0065	0.0121	0.0135	0.0141

Table 2. Experimental results for real-world data.