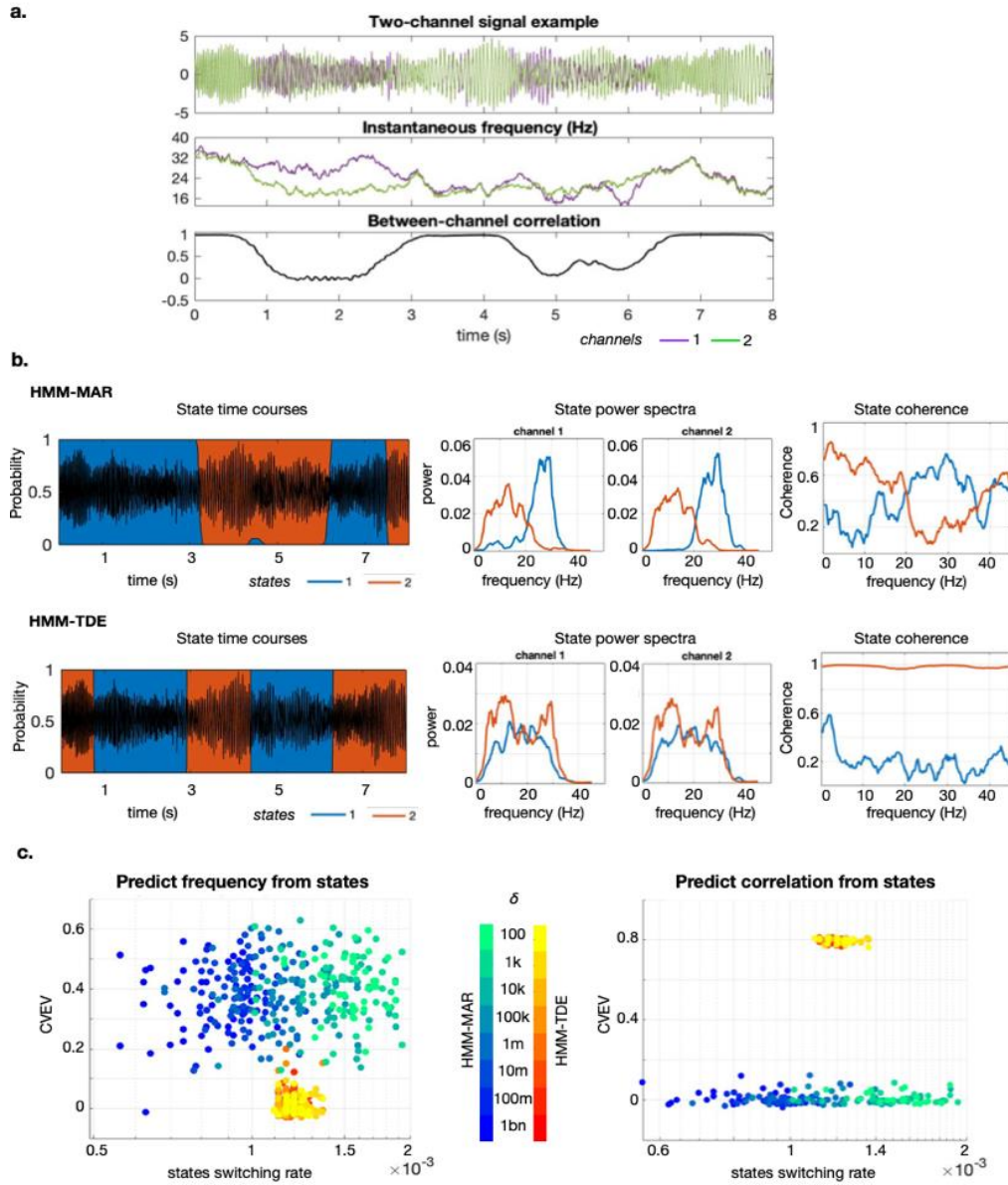


**Figure 4:** HMM experiments on two-channel data with periodic coherence



**Figure 4:** **a.** Example of the synthetic signals; instantaneous frequency is shown in the middle panel, and instantaneous correlation in the bottom panel. **b.** On the left, examples of the state time courses of HMM-MAR (top panel) and HMM-TDE (bottom panel) applied to the signal in **a**; shown also the corresponding state power spectra (middle) and coherence (right). Here,  $\delta = 10k$ , HMM-MAR order  $P=3$ , and the HMM-TDE lags  $L=15$ , with  $S=3$ . **c.** Cross validated explained variance (CVEV) of the HMM states predicting the ground truth instantaneous frequency of the channels (average explained variance across channels, left) and channel correlation (right) for 10 repetitions of the experiment and for different values of the state switching rate, manipulated through  $\delta$ . Order and lags set as in **b**.