## Running time of increasing hidden state space Forward Backward Baum-Welch (1 iteration) 0.015 -0.015 -0.0100 -0.010 -0.010 -0.0075 -0.005 -0.005 variant 0.0050 mean time [s] **BLAS** 0.000 -25 50 7<sub>5</sub> 25 75 50 50 25 75 100 100 100 Conventional Conventional sparse Posterior Decoding Viterbi 0.016 -**CSR RSB** 0.010 -0.012 -0.008 -0.005 -0.004 -0.000 -50 75 25 50 75 100 25 100 0 hidden states

error bars: standard deviation of 3 replicates input size: 100000, alphabet size: 4