

Step 1	Signal processing. Starting with $n = 5$. <i>Threshold</i> set to 0.99.
Step 2	Take first n data points as the test data. Use stochastic filtering to calculate the probability π_1 of a mode-switching event in the test data, e.g. this would begin by looking for an event transitioning to an proton-pumping mode.
Step 3	If $\pi_1 < 0.99$ (less than <i>threshold</i>): Increase the size of the test data $n = n + 5$ and return to step (2); If the end of the data set is reached in this way go to (4).
Step 3b*	If $\pi_1 \geq 0.99$ (greater than or equal to <i>threshold</i>): Take the MAP estimates for the model parameters and store the resulting estimated signal up until first event; Return to step (2) starting from the data following the MAP estimate for the event, this time looking for the alternative mode-switching events, e.g. if previously looking for proton-pumping modes, now looking for inactive modes
Step 4	When reaching the end of the data with $\pi_1 < 0.99$: Calculate the MAP estimates for the model parameters when there is no mode-switching, e.g. if the last event detected was an inactive mode; then calculate the MAP estimates when the signal remains in its inactive mode for the remaining data; Store the resulting estimated signal.
Step 5	*In the code there is also an additional check in (3b) that there aren't two mode-switching events in the test data. This probability π_2 is calculated and if it is greater than the threshold then we use take the MAP estimates for the parameters in the model with 2 events and store the resulting estimated signal up until first event. Then going back to (2) starting from the MAP estimate for the first event.