

**Table S8.** Comparing performance of different CSSM model configurations to HMM model.

Duration	Distance	Mode	$t$	$p_t$	$M_t$	$V$	$p_V$	$M_V$	$p_{SW}$
$\tau_c$ (continuous)	$f_\delta$ (complete)	Forward	3.14	.02	.037	27	.031	.036	.043
$\tau_d$ (discrete)	$f_\delta$ (complete)	Forward	7.87	< .001	.067	28	.016	.07	.14
$\tau_c$ (continuous)	$f_{\bar{\delta}}$ (restricted)	Forward	5.78	.001	.066	28	.016	.069	.12
$\tau_d$ (discrete)	$f_{\bar{\delta}}$ (restricted)	Forward	9.37	< .001	.098	28	.016	.11	.081
$\tau_c$ (continuous)	$f_h$ (script)	Forward	3.61	.011	.043	27	.031	.042	.43
$\tau_d$ (discrete)	$f_h$ (script)	Forward	7.67	< .001	.064	28	.016	.064	.79
$\tau_c$ (continuous)	$f_\delta$ (complete)	Smoothing	6.75	< .001	.063	28	.016	.068	.078
$\tau_d$ (discrete)	$f_\delta$ (complete)	Smoothing	6.70	< .001	.083	28	.016	.087	.12
$\tau_c$ (continuous)	$f_{\bar{\delta}}$ (restricted)	Smoothing	6.71	< .001	.082	28	.016	.087	.16
$\tau_d$ (discrete)	$f_{\bar{\delta}}$ (restricted)	Smoothing	5.88	.001	.1	28	.016	.11	.27
$\tau_c$ (continuous)	$f_h$ (script)	Smoothing	7.14	< .001	.06	28	.016	.064	.12
$\tau_d$ (discrete)	$f_h$ (script)	Smoothing	6.27	< .001	.08	28	.016	.092	.044

Comparing performance of different CSSM model configurations to HMM model, using paired  $t$ -test and Wilcoxon signed rank tests (CM, O21s, L1). For all  $t$ -tests,  $df = 6$ .  $p_{SW}$  gives the p-value for the Shapiro-Wilk normality test.