

**Fig 10. Modeling results.** Exceedance probabilities ( $\varphi$ ) resulting from the random-effects family-wise model comparison. (A) Dirichlet-Categorical (DC) model, Hidden Markov Model (HMM) and null model family comparison, thresholded at  $\varphi > 0.99$  and applied for data reduction at all further levels. (B) Family comparison within the winning DC family, thresholded at  $\varphi > 0.95$ : first and second order transition probability models ( $TP_1$ ,  $TP_2$ ). (C) Family comparison within the winning DC family, thresholded at  $\varphi > 0.95$ : first order transition probability ( $TP_1$ ), alternation probability (AP) and stimulus probability (SP) models and applied at the final level.