***Figure S2****.* ***Illustration of the merit of phase-difference histograms in detecting consistent******phase dynamics embedded in simulated data sets.*** *Dataset 1 was generated from a combination of 25000 phase samples randomly selected from –π/4 to π/4 and the other 25000 samples with the opposite angles. Dataset 2 was generated by rotating Dataset 1 by π. The circular histograms depict a bimodal pattern of the phase distributions in Dataset 1 (left top panel) and Dataset 2 (middle top panel), but the pattern disappears when the phase data are pooled together (right top panel). The horizontal histograms depict the distributions of absolute phase differences, which were obtained by calculating phase distance in each pair of phase samples in Dataset 1 (left bottom panel) and Dataset 2 (middle bottom panel). By contrast, after pooling absolute phase differences from Datasets 1 and 2, the phase-difference distribution (right bottom panel) retains the bimodal pattern embedded in each data set. Although in real data, phase distributions are not limited to any specific mode as shown in Fig. S1, this simplified simulation aims to elucidate how phase differences are more suitable than phase histograms for detecting the presence of a consistent pattern revealed from a pool of data sets (each data set can be viewed as a set of phase samples across trials at a given sensor-time-frequency point) because this measure assesses the relation between phase samples in a relative manner.*