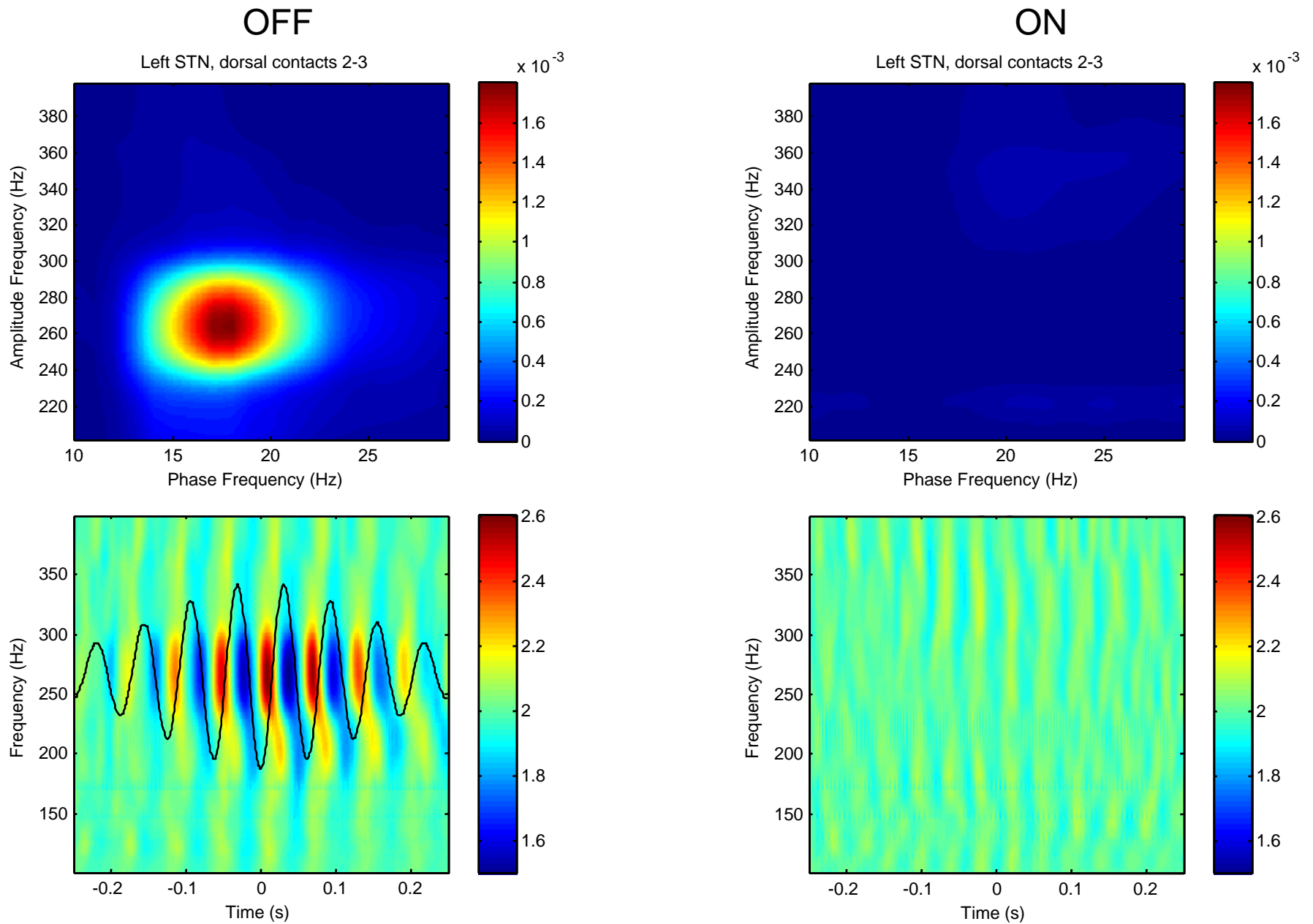
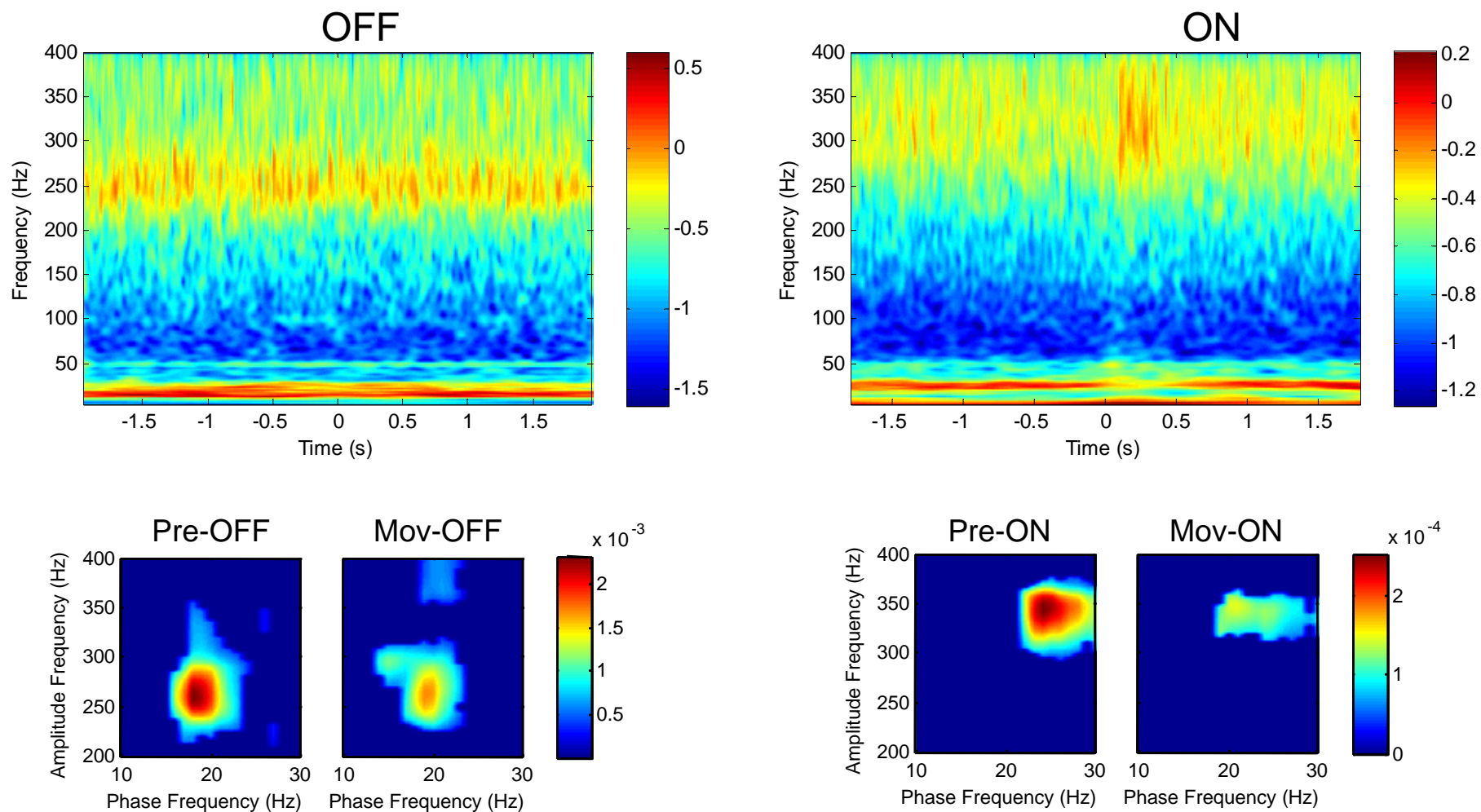


Supplementary figure 1. Phase to amplitude representations of the modulation index (MI) in both nuclei from patient 14 at rest, in the “off” (upper images) and “on” state (lower images). All plots are to the same scale. On the right-hand side, the frequency of the “off” HFOs is higher than on the left, but it is modulated at a very similar low beta frequency. In the “on” state, the frequency of the HFOs on the right-hand side remains similar, but it is only modulated by the high beta activity.



Supplementary figure 2. Phase to amplitude representations of the modulation index (MI: top) and mean normalized power of the 100-400 Hz range time-locked to the phase minima of the beta activity (bottom) from patient 9, in the “off” (left) and “on” state (right-hand images). The images on the left and right use the same scale. In the “on” state, there is smaller cross-frequency coupling at higher frequencies than in the “off” motor state.



Supplementary figure 3. Movement-related changes in HFO power and beta-HFO coupling in both motor states in patient 6 (right dorsal contact pair). Top. Average of the single-sweep Stockwell transforms in both motor states ("off" & "on") during movement execution. Time 0 indicates the beginning of the movement. Bottom: Phase to amplitude representations of the value of the modulation index (MI) in pre-movement (Pre-) and peri-movement periods (Mov-) from the same patient and contact pair, in the "off" (left) and "on" state (right). In the "off" state there is no peri-movement power-increase, and the decrease in the peri-movement MI is very small. In the "on" state, there is a marked peri-movement power increase together with a higher peri-movement decrease in MI. Note that the "on" and "off" scales are different.