Supplemental Material S1: Voice maps and electroglottographic wave shapes for all participants from the speech range profile task in the habitual range

For adult participants (13 females, 13 males) the speech range profile (SRP) was obtained from three trials of the Rainbow Passage (Fairbanks 1960) whereas for children (11 girls, 9 boys) a picture of the 'Park Play scene' (Patel and Connaghan, 2014) was used. Each page shows the data for one participant.

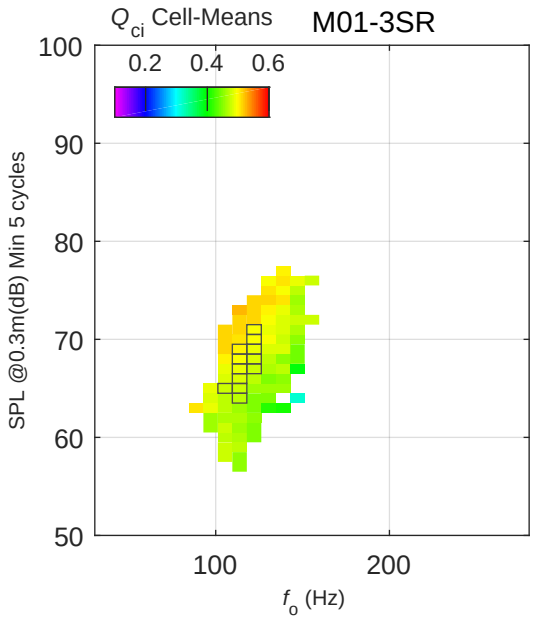
A cell is included here if at least five electroglottography (EGG) cycles occurred in it. The maps show the Cell-Mean of the given EGG parameter on a color scale. The **black grid** shows the participant's gamma (Γ) region, containing the top 50% of all the cell cycle counts in the map; this is taken to define the most representative core of the habitual speech range.

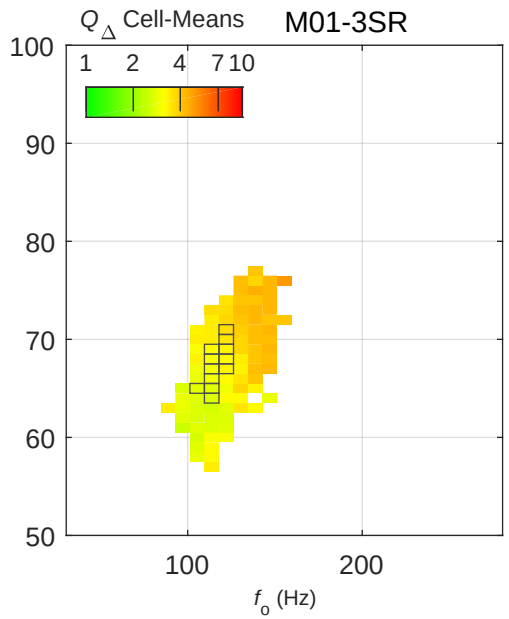
The six panels starting from top left to right (1-3) and bottom left to right (4-6) on each page show the following:

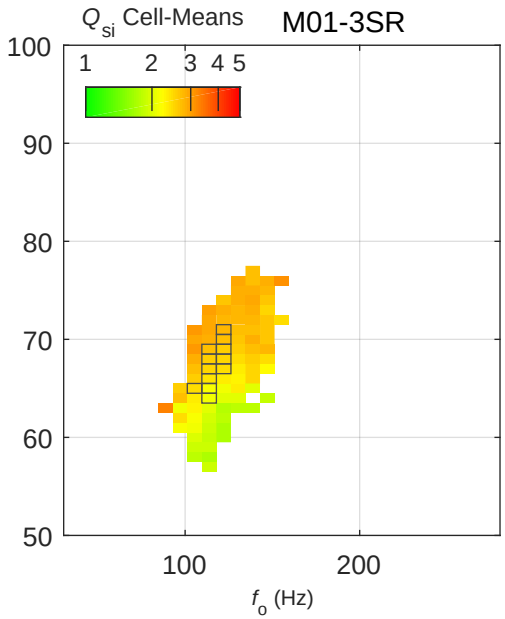
1. The Cell-Mean of the quotient of contact by integration Q_{ci}, a measure of the relative amount of contacting.
2. The Cell-Mean of the normalized peak dEGG amplitude quotient Q_{Δ}, a measure of the maximum rate of change in contact area over a cycle. Its minimum is 1, corresponding to a sinusoidal EGG.
3. The Cell-Mean of the quotient of speed by integration Q_{si}, a measure of the asymmetry of the contact phase. The value 1 represents a symmetrical contact phase, >1 means the pulse is skewed to the left.
4. The Cell-Mean of the cycle-rate sample entropy CSE, a measure of the disorder in successive EGG wave shapes. The pale cyan color signifies that all cycles in the cell received the value zero; they were below the threshold of the Sample Entropy computation. This indicates very stable phonation.
5. The distribution of five EGG wave shapes as obtained by 5-way clustering of this participant's productions.
6. The EGG wave shapes corresponding to those five clusters, each a concatenation of 4 identical pulses for visual clarity. The EGG parameters are annotated on each waveshape as Q_{ci}, $/Q_{\Delta}$ where / = slope and $\leftrightarrow Q_{si}$ where $\leftrightarrow$ = asymmetry.

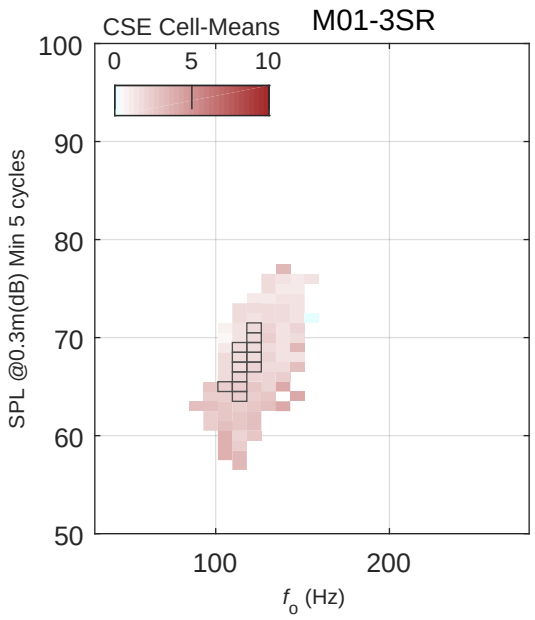
The dependent variables Q_{ci}-M, Q_{Δ}-M, Q_{si}-M and CSE-M for the connected speech task are the means within the Γ region of the respective Cell-Means listed above. Similarly, the dependent variables Q_{ci}-SD, Q_{Δ}-SD and Q_{si}-SD for the connected speech task are the means of the respective Cell-SDs (not shown here) of the SRP data within the Γ region.

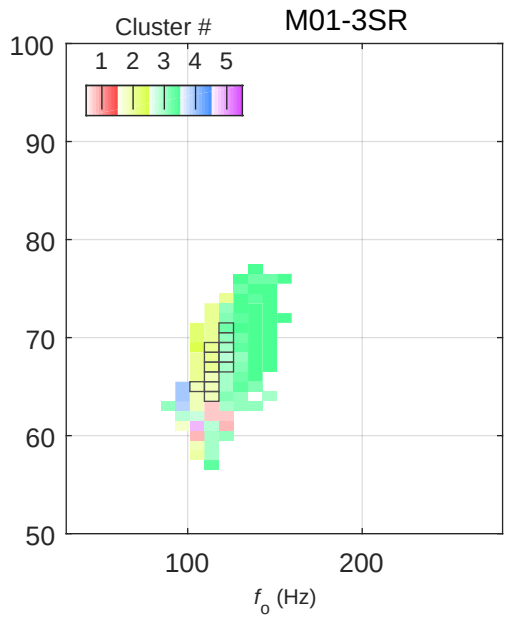
The scale tick values show how the Cell-Mean of the parameter is mapped to a color. For the Q_{Δ} and Q_{si} parameters, the tick spacing is logarithmic only to provide visual contrast.

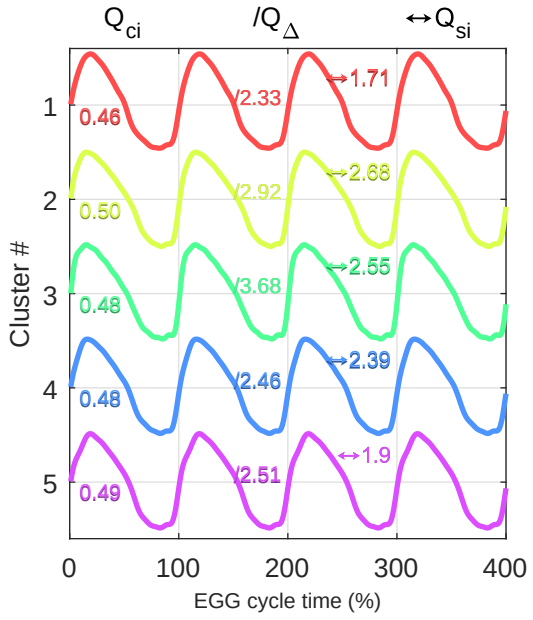

Qci Cell-Means
M01-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

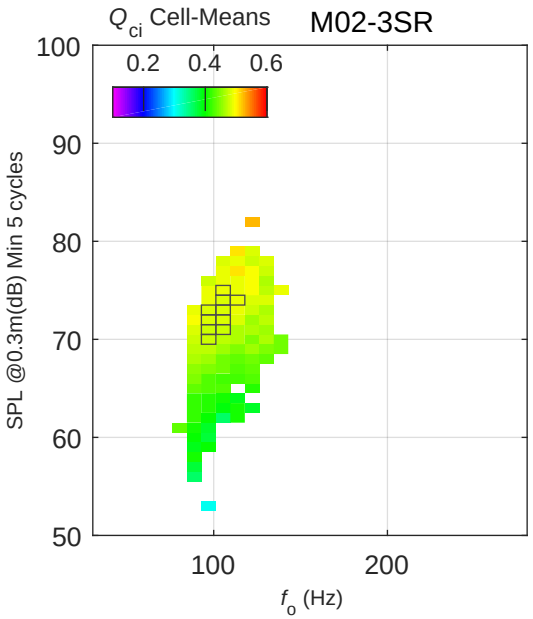

Q Δ Cell-Means
M01-3SR
1 2 4 7 10
fo (Hz)

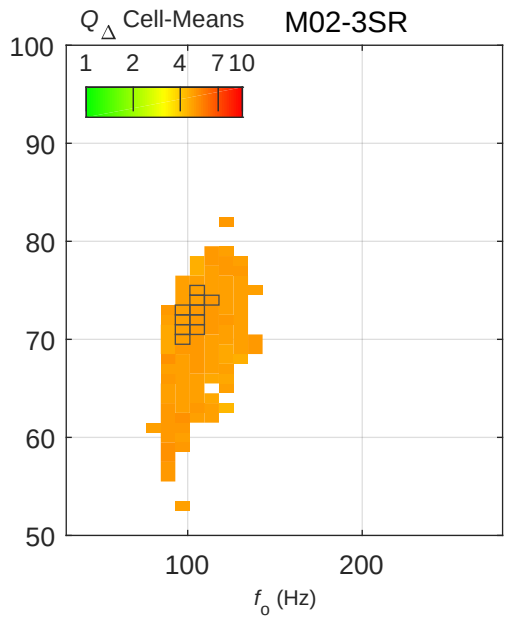

Qsi Cell-Means
M01-3SR
1 2 3 4 5
fo (Hz)

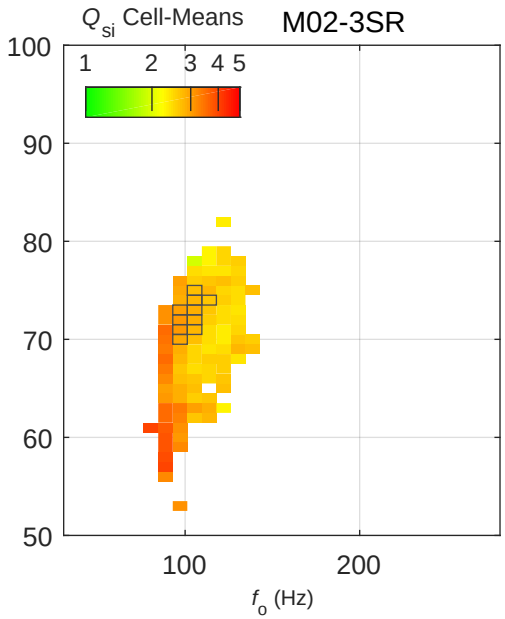

CSE Cell-Means
M01-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

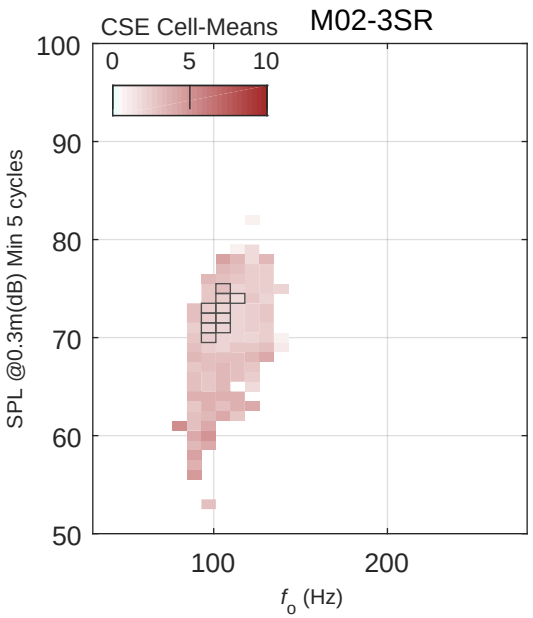

Cluster #
M01-3SR
1 2 3 4 5
fo (Hz)

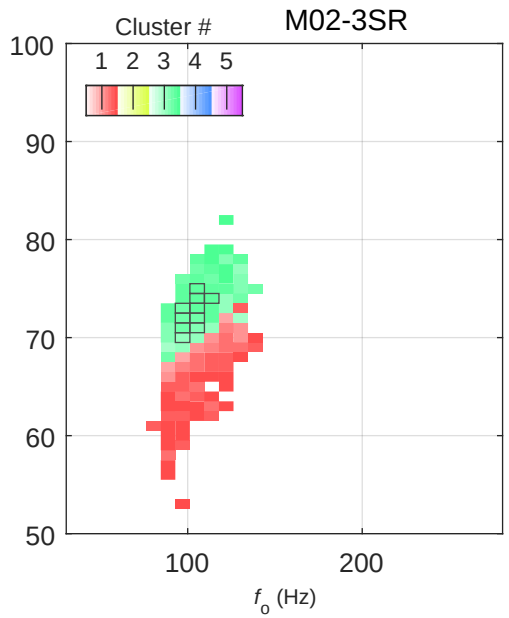

Qci /Q Δ ↔Qsi
0.46
/2.33
↔1.71
0.50
/2.92
↔2.68
0.48
/3.68
↔2.55
0.48
/2.46
↔2.39
0.49
/2.51
↔1.9
Cluster #
EGG cycle time (%)

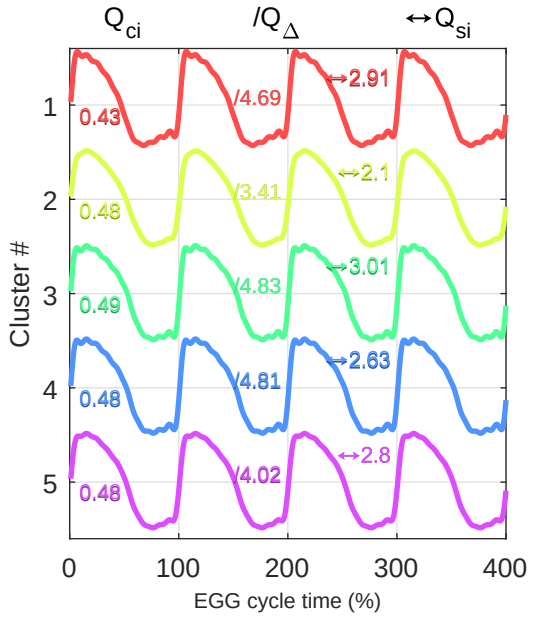

Q_{ci} Cell-Means
M02-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

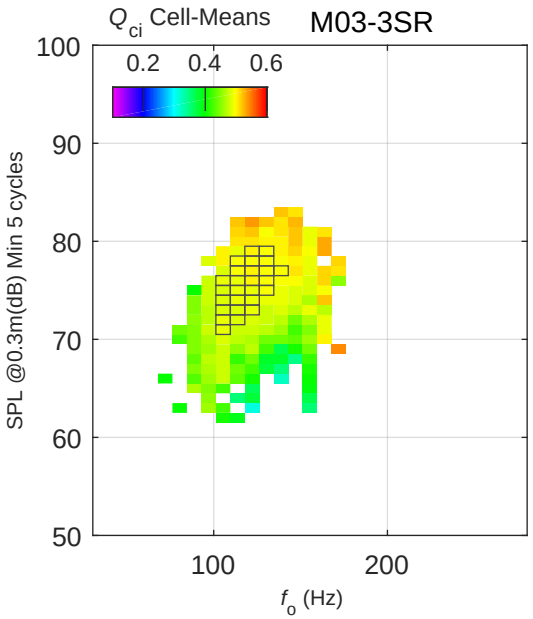

Q_{Δ} Cell-Means
M02-3SR
1 2 4 7 10
f_o (Hz)

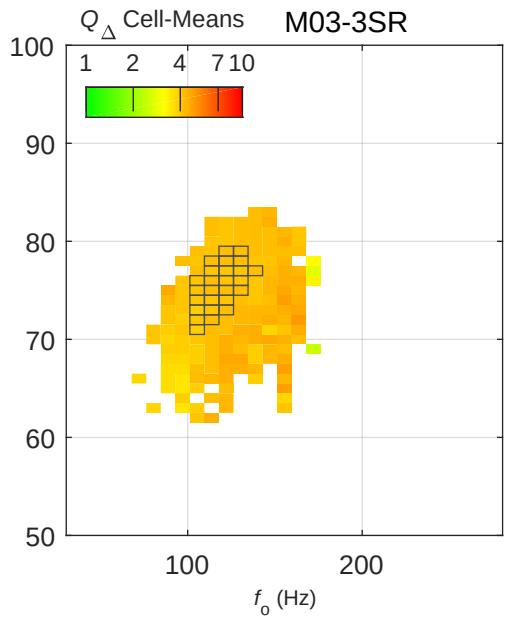

Q_{si} Cell-Means
M02-3SR
1 2 3 4 5
f_o (Hz)

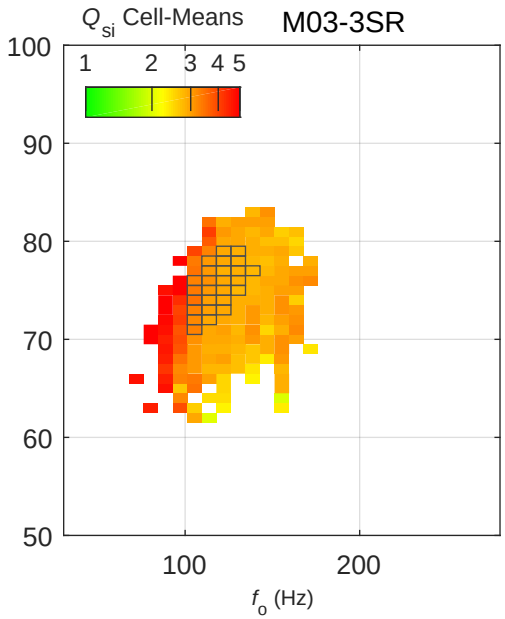

CSE Cell-Means
M02-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

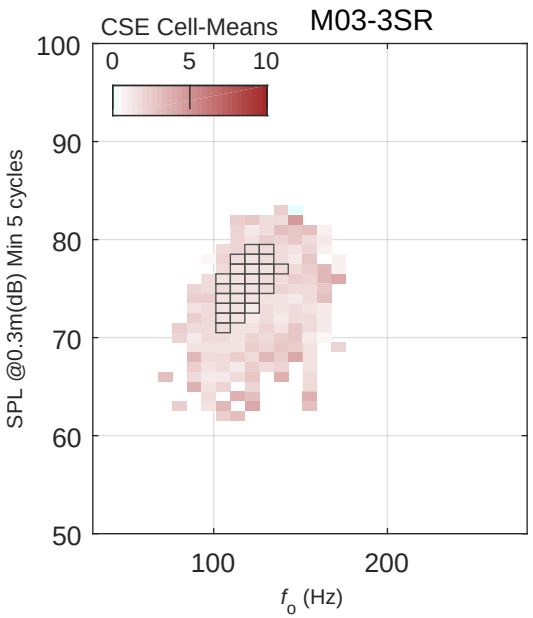

Cluster #
M02-3SR
1 2 3 4 5
f_o (Hz)

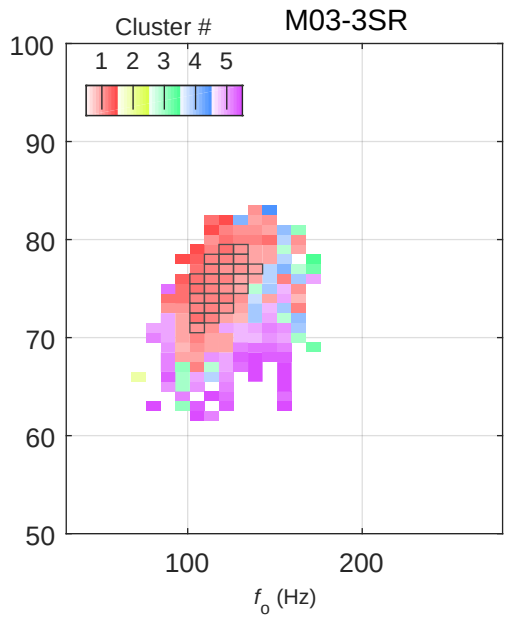

Q_{ci} /Q_{Δ} ↔Q_{si}
Cluster #
0.43
/4.69
↔2.91
0.48
/3.41
↔2.1
0.49
/4.83
↔3.01
0.48
/4.81
↔2.63
0.48
/4.02
↔2.8
EGG cycle time (%)

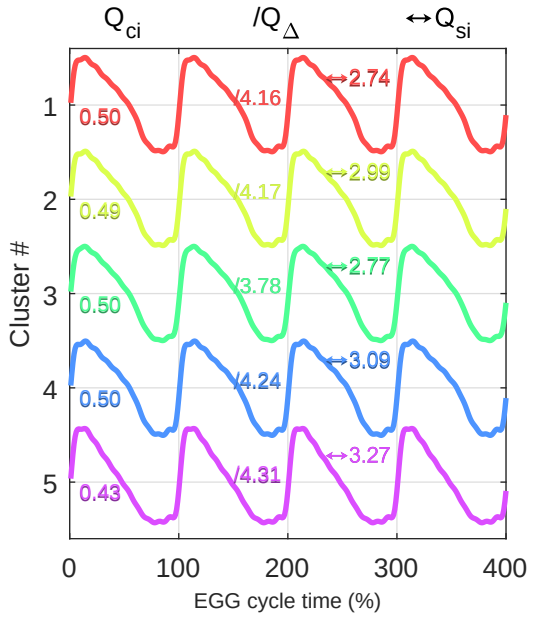

Qci Cell-Means
M03-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

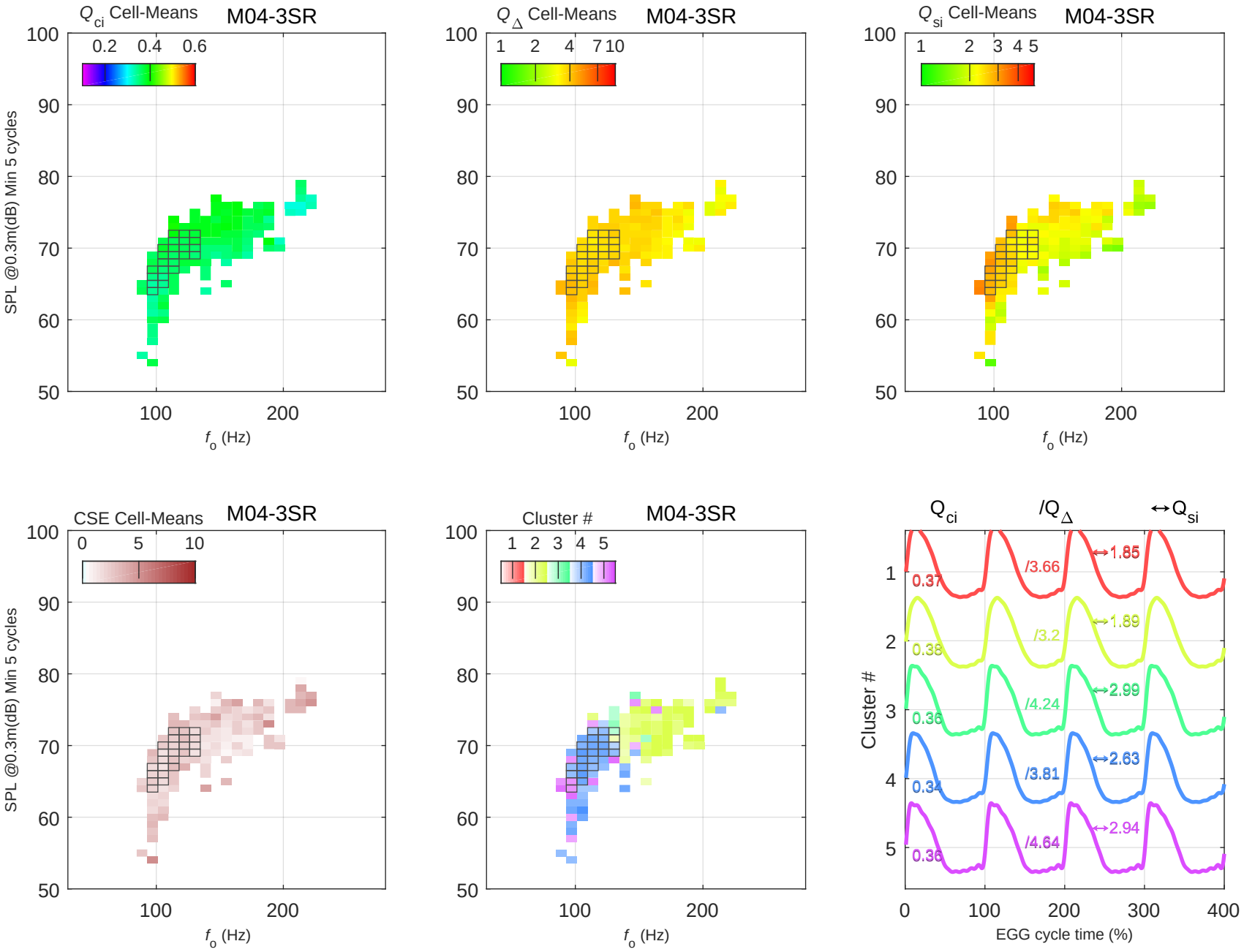

Q Δ Cell-Means
M03-3SR
1 2 4 7 10
fo (Hz)

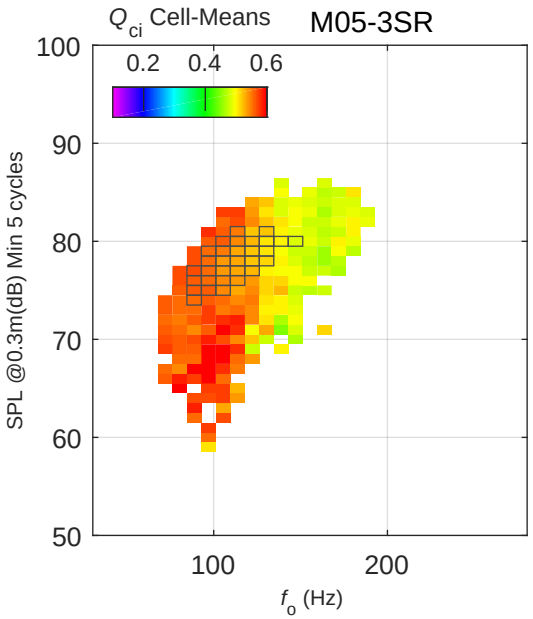

Qsi Cell-Means
M03-3SR
1 2 3 4 5
fo (Hz)

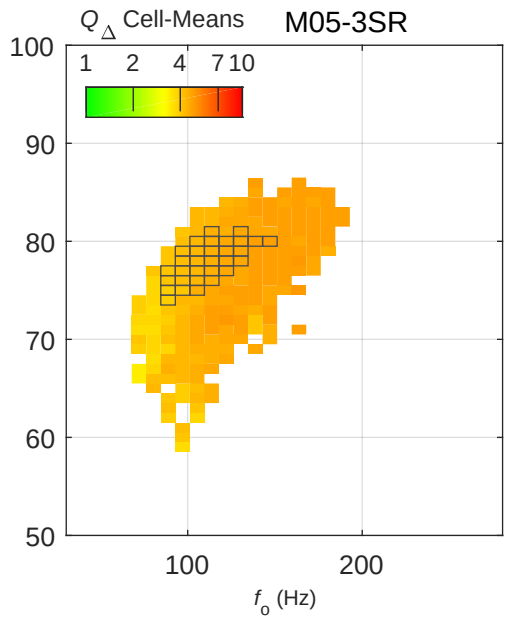

CSE Cell-Means
M03-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

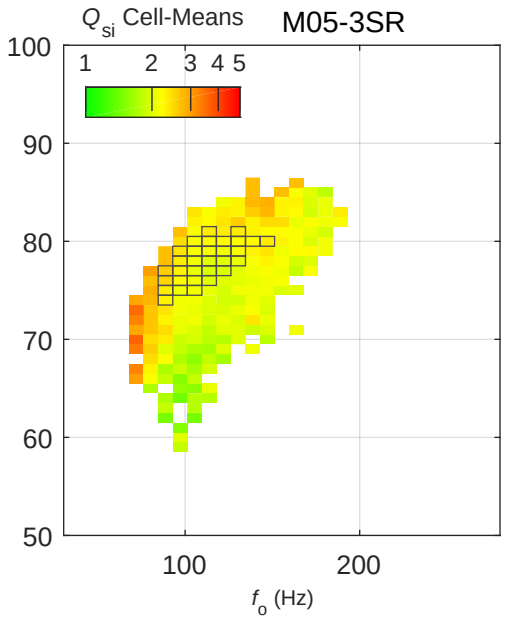

Cluster #
M03-3SR
1 2 3 4 5
fo (Hz)

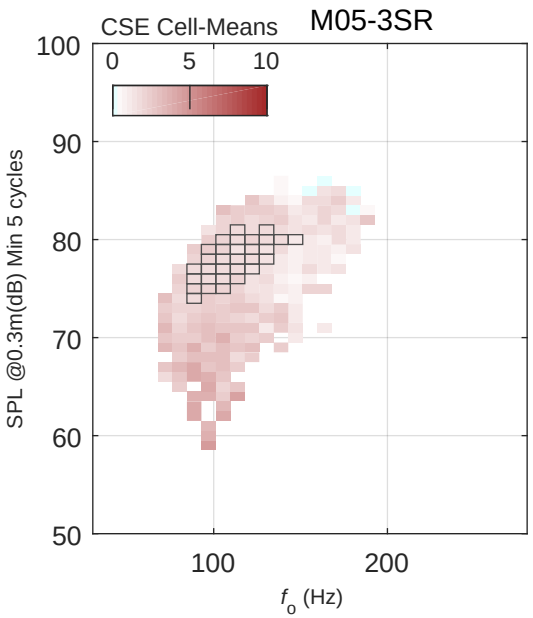

Qci /Q Δ ↔Qsi
0.50
/4.16
↔2.74
0.49
/4.17
↔2.99
0.50
/3.78
↔2.77
0.50
/4.24
↔3.09
0.43
/4.31
↔3.27
Cluster #
EGG cycle time (%)

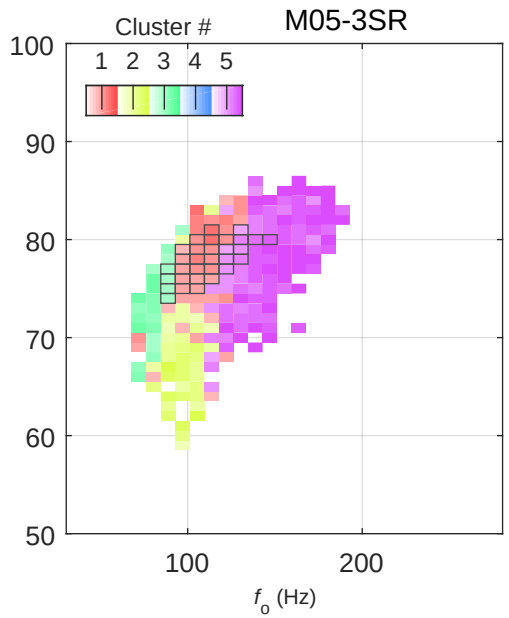

Qci Cell-Means
M04-3SR
0.2 0.4 0.6
Q△ Cell-Means
M04-3SR
1 2 4 7 10
Qsi Cell-Means
M04-3SR
1 2 3 4 5
CSE Cell-Means
M04-3SR
0 5 10
Cluster #
M04-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /Q△ ↔Qsi
Cluster #
EGG cycle time (%)
0.37 /3.66 ↔1.85
0.38 /3.2 ↔1.89
0.36 /4.24 ↔2.99
0.34 /3.81 ↔2.63
0.36 /4.64 ↔2.94

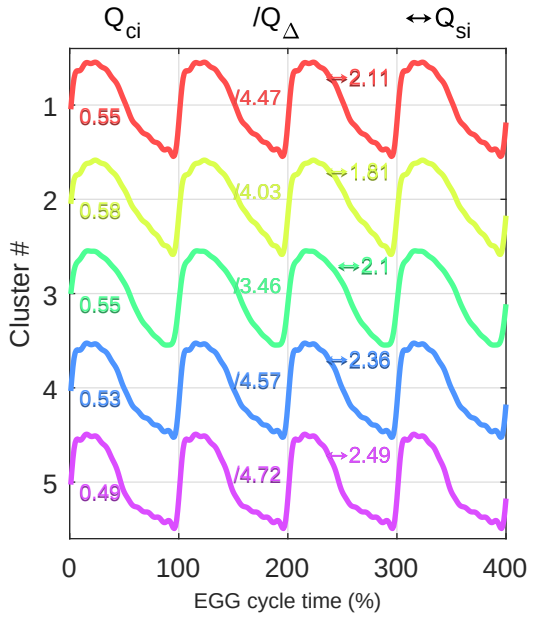

Q_{ci} Cell-Means
M05-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

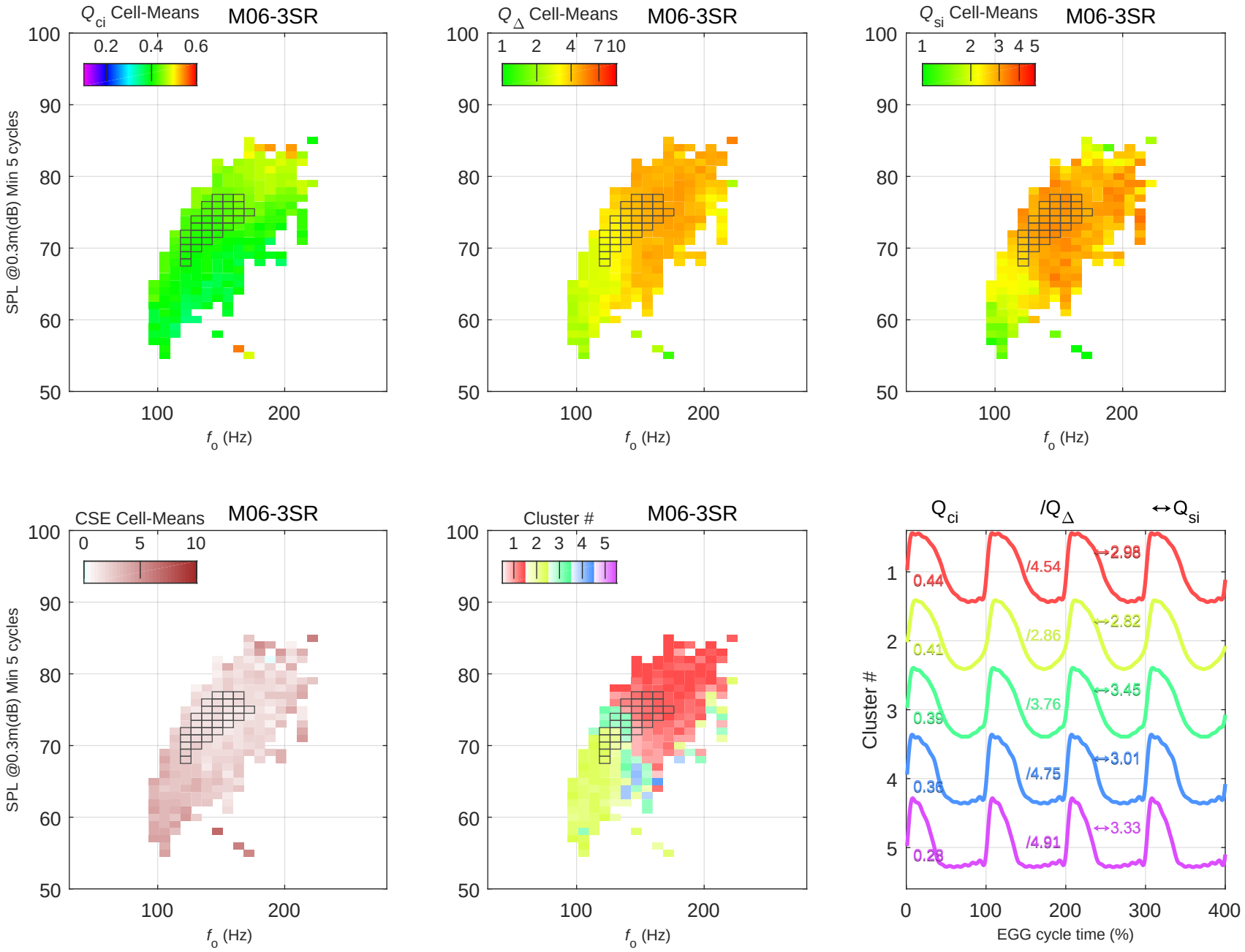

Q_{Δ} Cell-Means
M05-3SR
1 2 4 7 10
f_o (Hz)

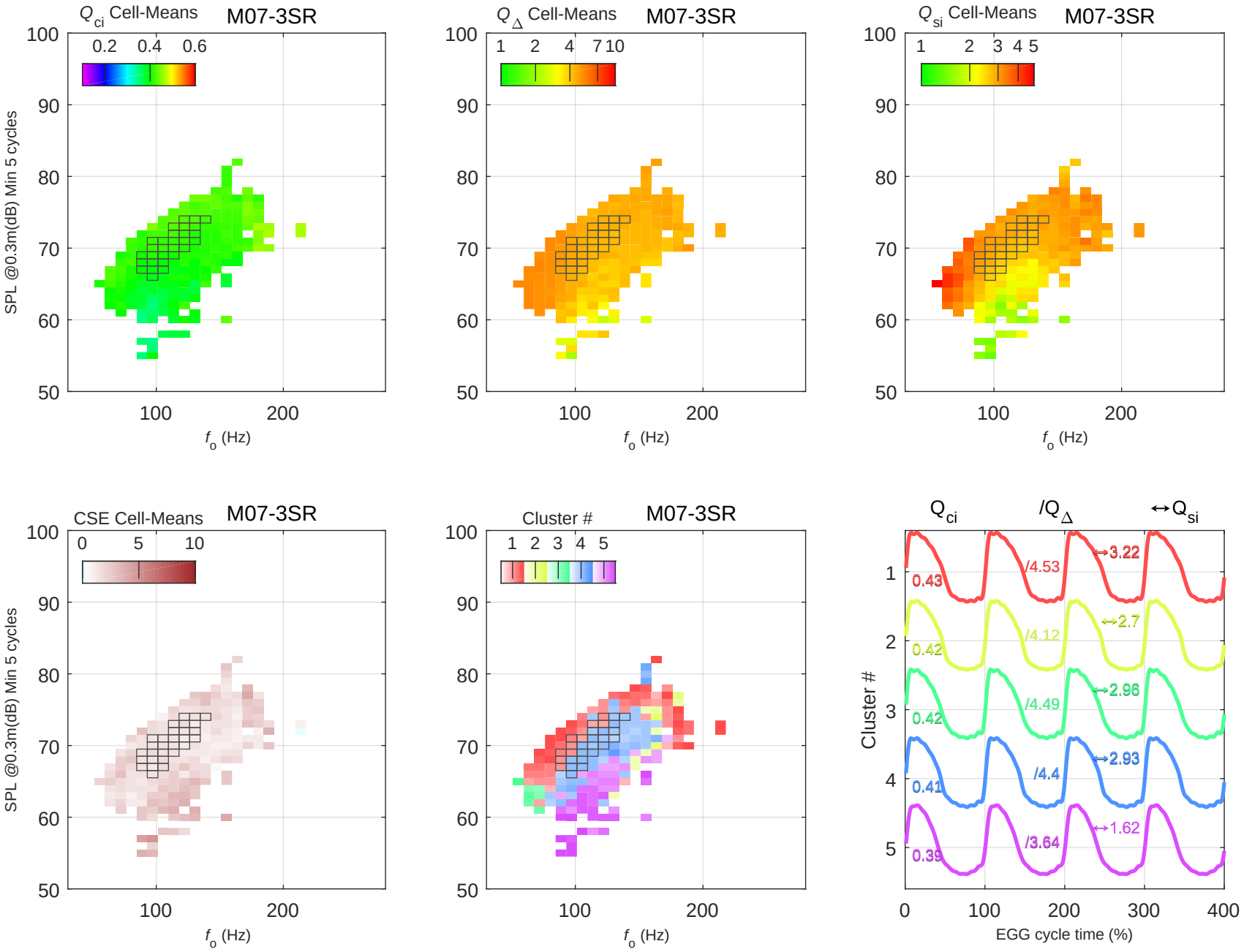

Q_{si} Cell-Means
M05-3SR
1 2 3 4 5
f_o (Hz)

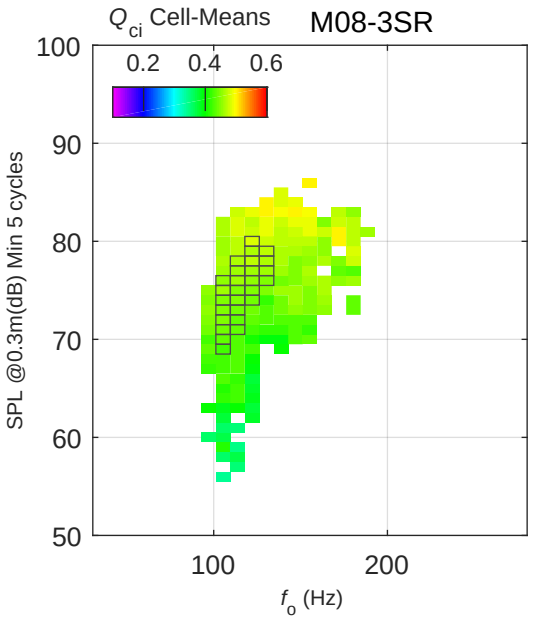

CSE Cell-Means
M05-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

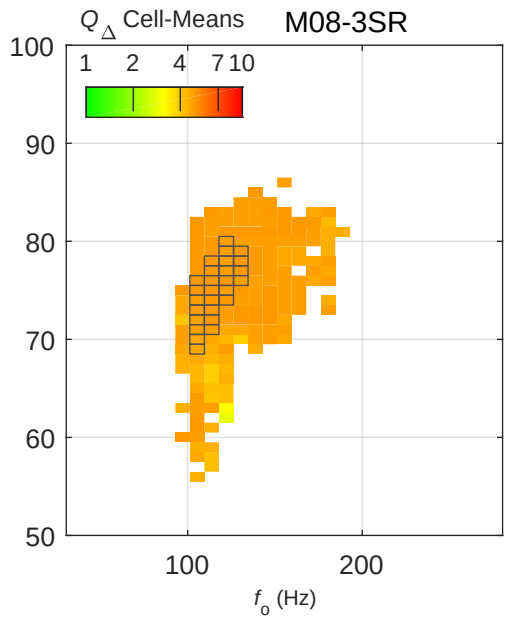

Cluster #
M05-3SR
1 2 3 4 5
f_o (Hz)

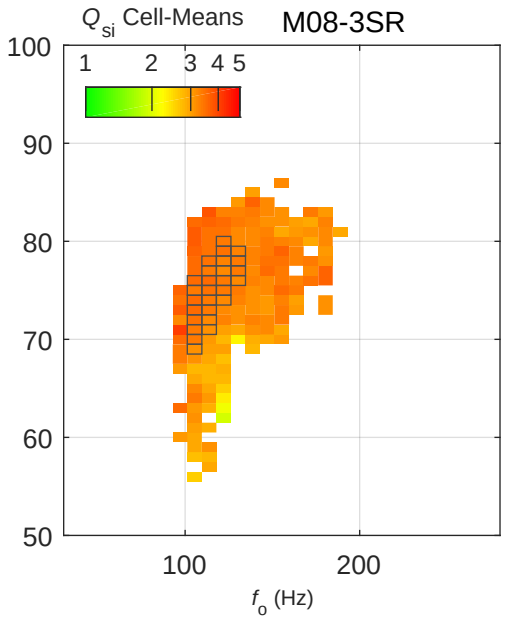

Q_{ci} /Q_{Δ} ↔Q_{si}
0.55 /4.47 ↔2.11
0.58 /4.03 ↔1.81
0.55 /3.46 ↔2.1
0.53 /4.57 ↔2.36
0.49 /4.72 ↔2.49
Cluster #
EGG cycle time (%)

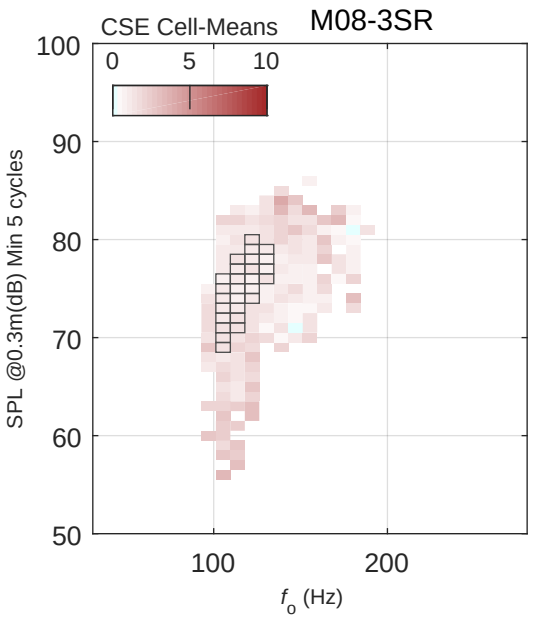

Qci Cell-Means
M06-3SR
0.2 0.4 0.6
Q Δ Cell-Means
M06-3SR
1 2 4 7 10
Qsi Cell-Means
M06-3SR
1 2 3 4 5
CSE Cell-Means
M06-3SR
0 5 10
Cluster #
M06-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f o (Hz)
Qci /Q Δ ↔Qsi
Cluster #
EGG cycle time (%)
0.44
/4.54
↔2.98
0.41
/2.86
↔2.82
0.39
/3.76
↔3.45
0.36
/4.75
↔3.01
0.28
/4.91
↔3.33

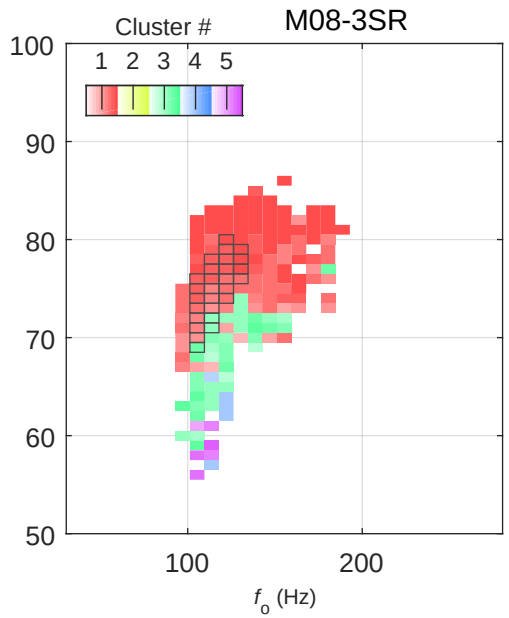

Qci Cell-Means
M07-3SR
0.2 0.4 0.6
Q△ Cell-Means
M07-3SR
1 2 4 7 10
Qsi Cell-Means
M07-3SR
1 2 3 4 5
CSE Cell-Means
M07-3SR
0 5 10
Cluster #
M07-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /Q△ ↔Qsi
Cluster #
EGG cycle time (%)
0.43
/4.53
↔3.22
0.42
/4.12
↔2.7
0.42
/4.49
↔2.96
0.41
/4.4
↔2.93
0.39
/3.64
↔1.62

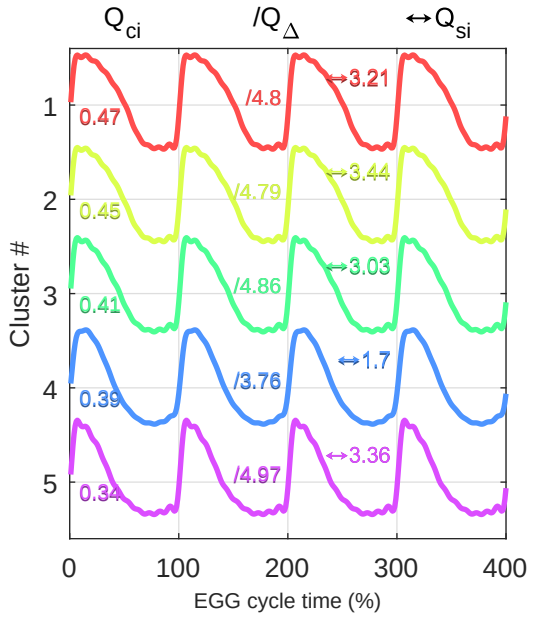

Qci Cell-Means
M08-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

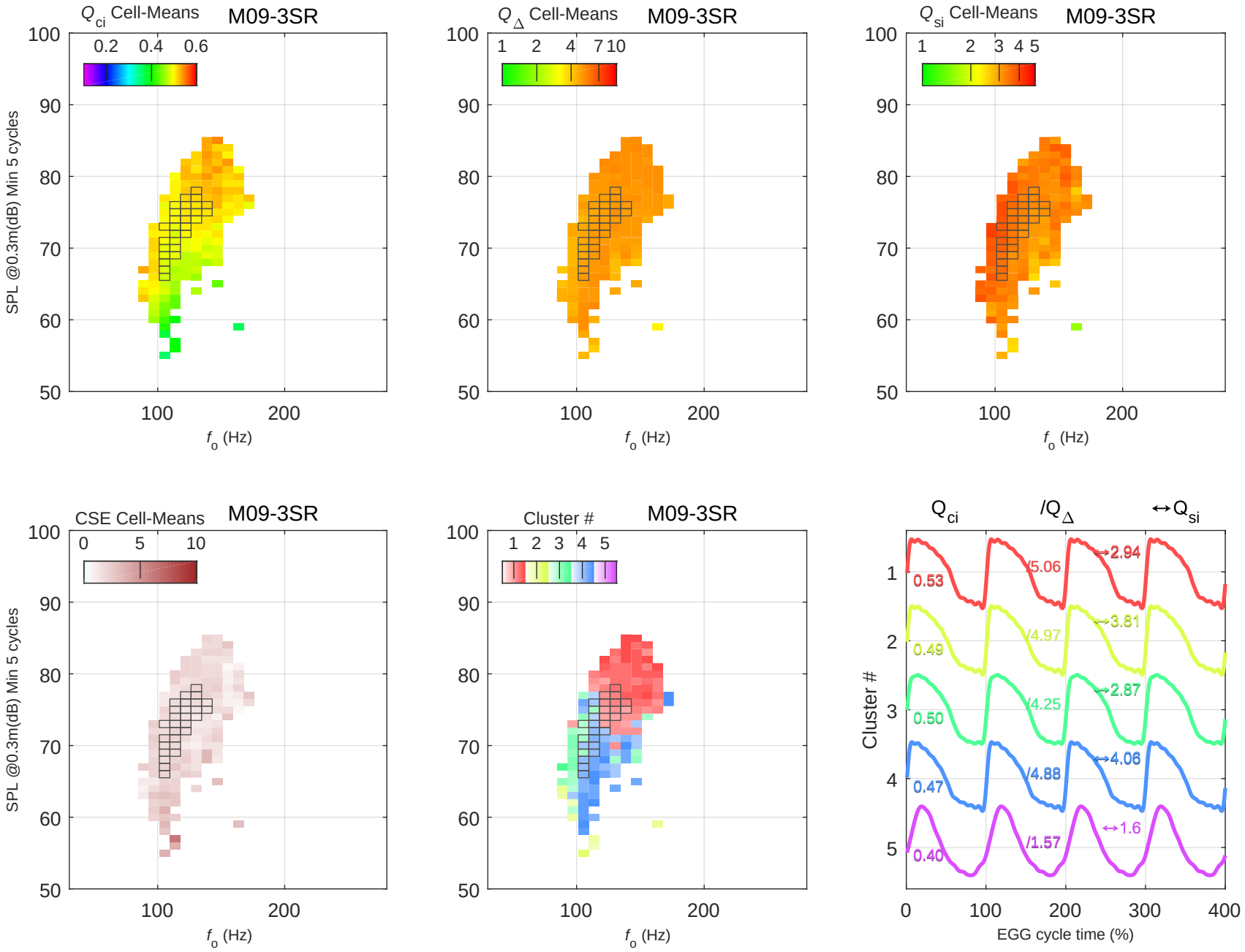

Q Δ Cell-Means
M08-3SR
1 2 4 7 10
fo (Hz)

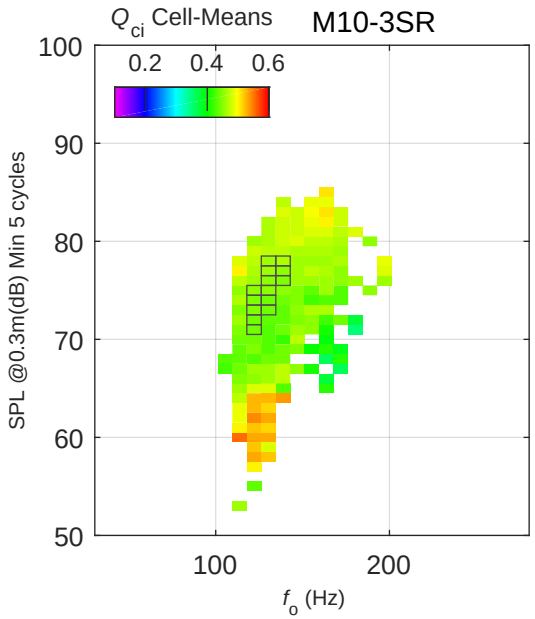

Qsi Cell-Means
M08-3SR
1 2 3 4 5
fo (Hz)

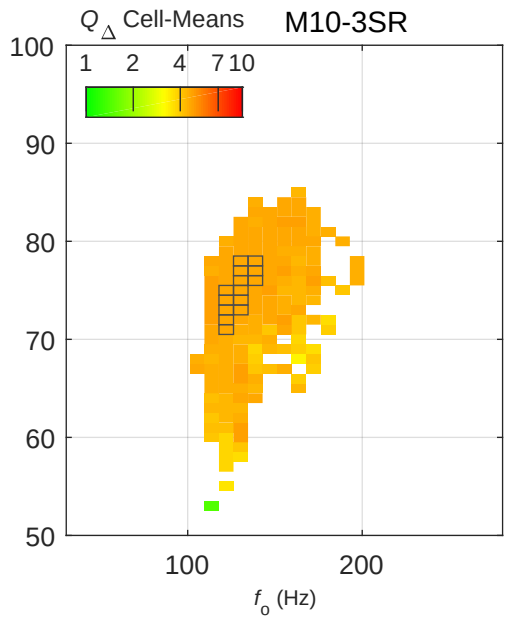

CSE Cell-Means
M08-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

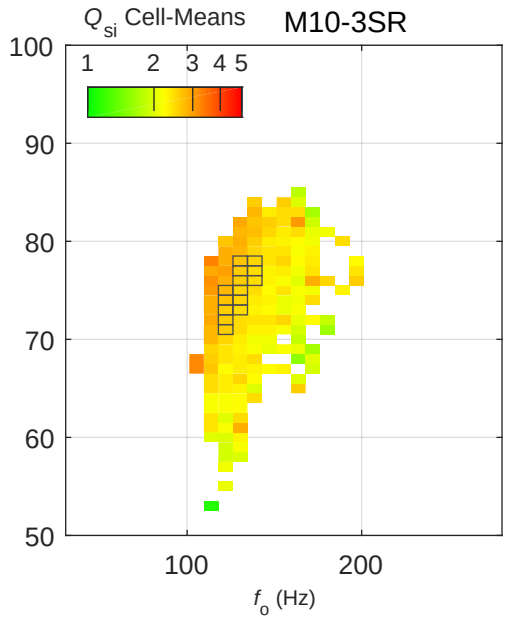

Cluster #
M08-3SR
1 2 3 4 5
fo (Hz)

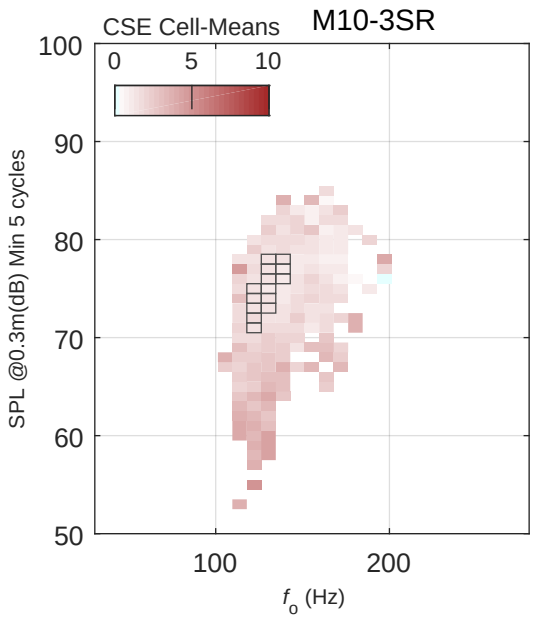

Qci /Q Δ ↔Qsi
0.47
/4.8
↔3.21
0.45
/4.79
↔3.44
0.41
/4.86
↔3.03
0.39
/3.76
↔1.7
0.34
/4.97
↔3.36
Cluster #
EGG cycle time (%)

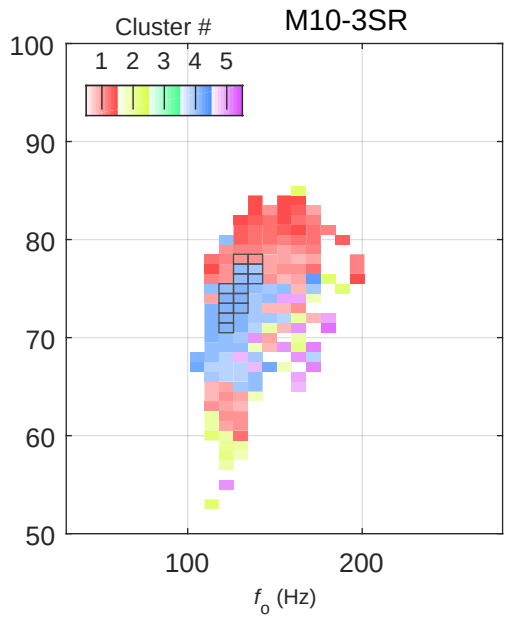

Qci Cell-Means
M09-3SR
0.2 0.4 0.6
Q Δ Cell-Means
M09-3SR
1 2 4 7 10
Qsi Cell-Means
M09-3SR
1 2 3 4 5
CSE Cell-Means
M09-3SR
0 5 10
Cluster #
M09-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /Q Δ ↔Qsi
Cluster #
EGG cycle time (%)
0.53
/5.06
↔2.94
0.49
/4.97
↔3.81
0.50
/4.25
↔2.87
0.47
/4.88
↔4.06
0.40
/1.57
↔1.6

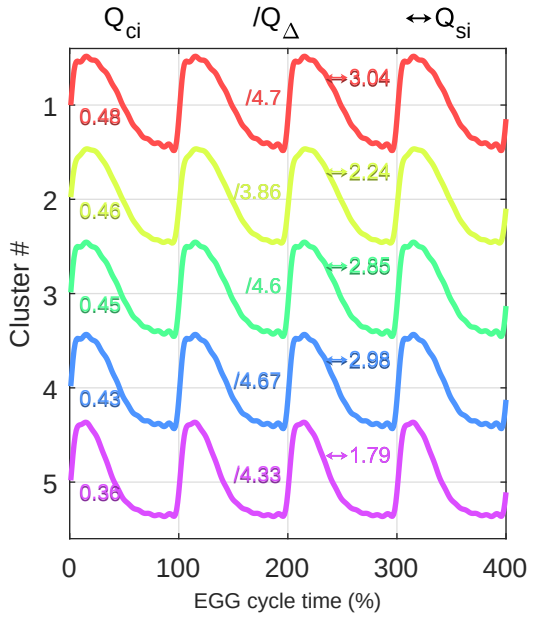

Q_{ci} Cell-Means
M10-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

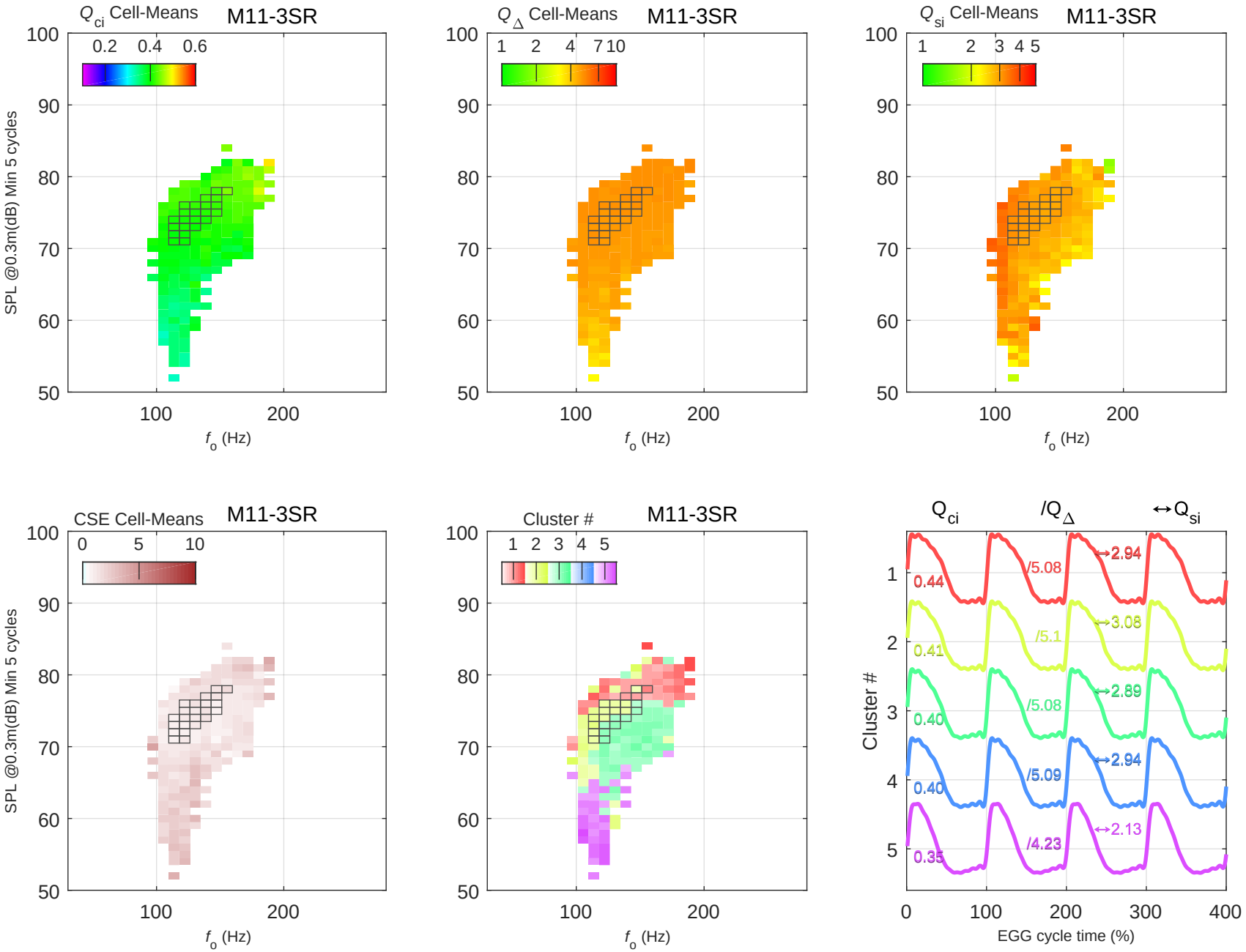

Q_{Δ} Cell-Means
M10-3SR
1 2 4 7 10
f_o (Hz)

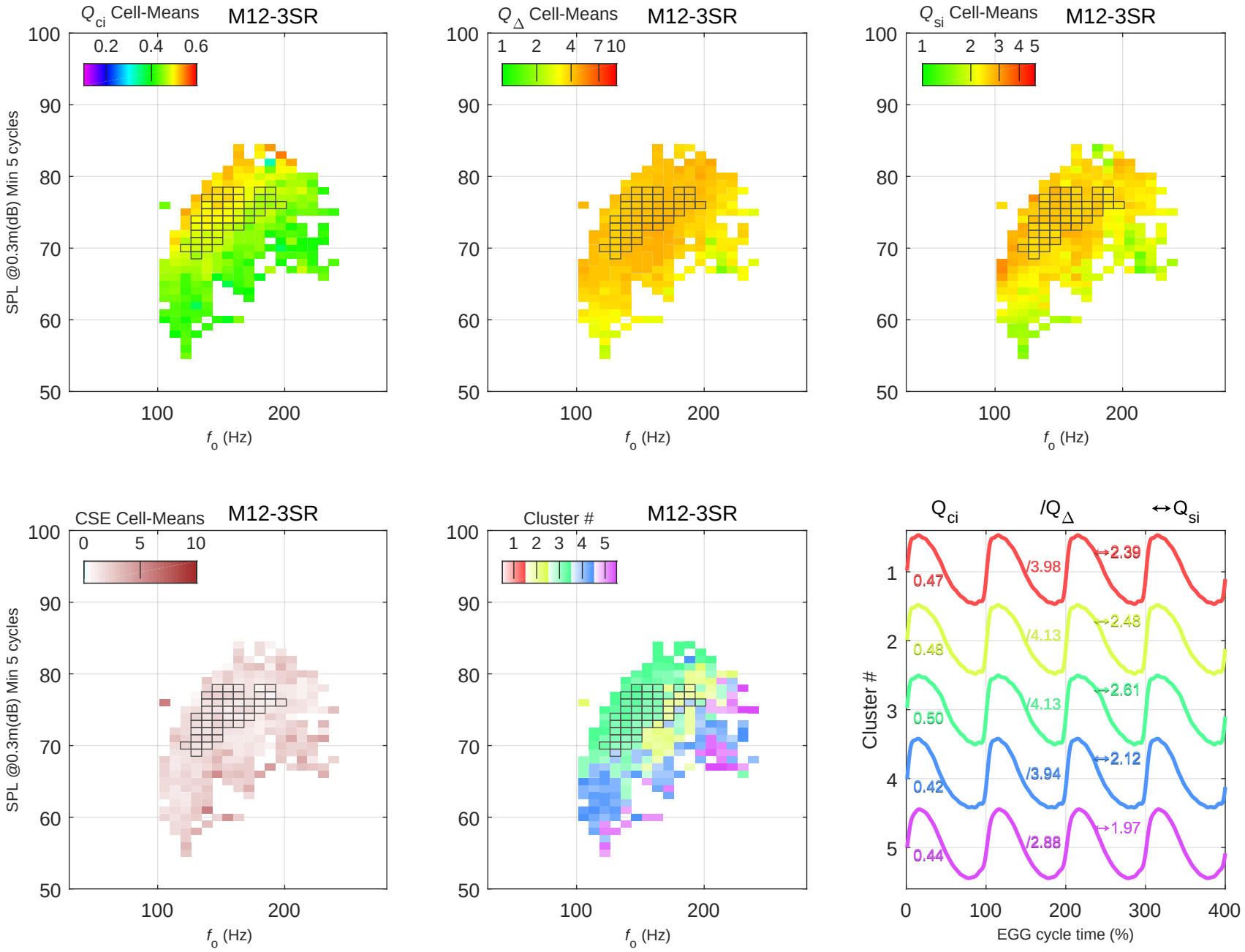

Q_{si} Cell-Means
M10-3SR
1 2 3 4 5
f_o (Hz)

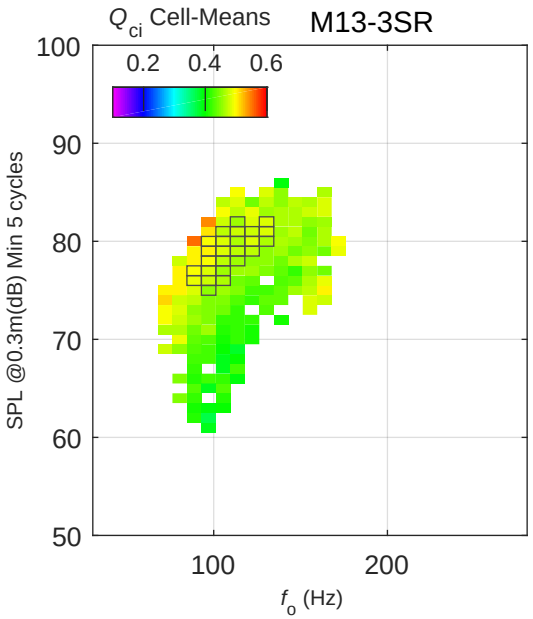

CSE Cell-Means
M10-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

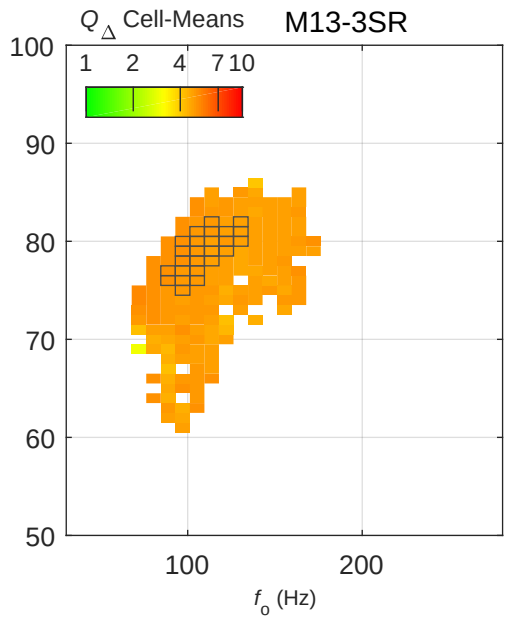

Cluster #
M10-3SR
1 2 3 4 5
f_o (Hz)

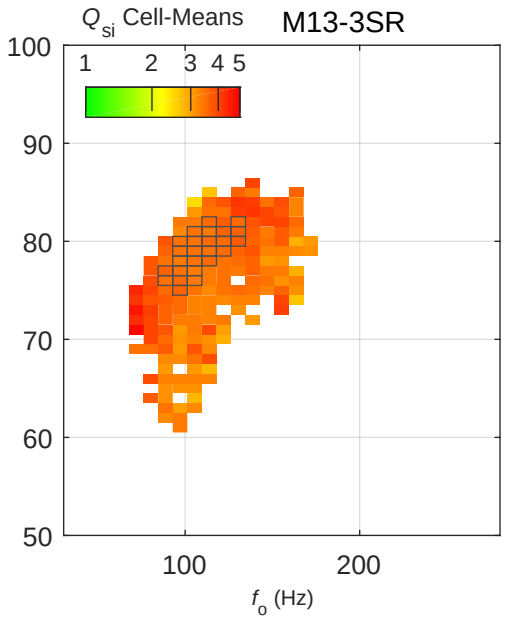

Q_{ci} /Q_{Δ} ↔Q_{si}
0.48 /4.7 ↔3.04
0.46 /3.86 ↔2.24
0.45 /4.6 ↔2.85
0.43 /4.67 ↔2.98
0.36 /4.33 ↔1.79
Cluster #
EGG cycle time (%)

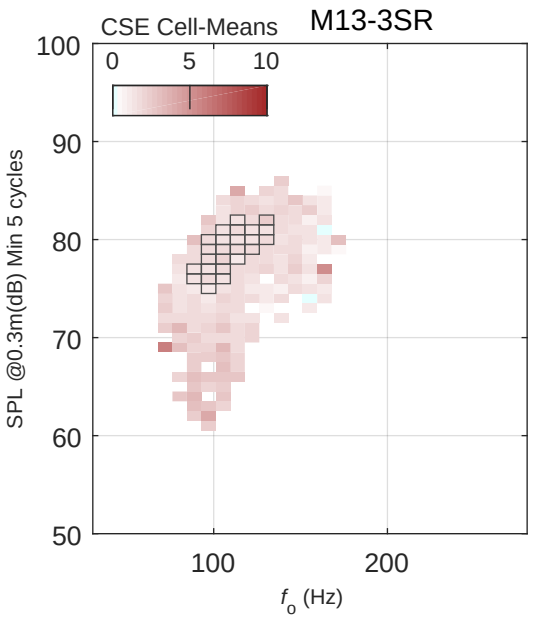

Qci Cell-Means
M11-3SR
0.2 0.4 0.6
Q Δ Cell-Means
M11-3SR
1 2 4 7 10
Qsi Cell-Means
M11-3SR
1 2 3 4 5
CSE Cell-Means
M11-3SR
0 5 10
Cluster #
M11-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f o (Hz)
Qci /Q Δ ↔Qsi
Cluster #
EGG cycle time (%)
0.44 /5.08 ↔2.94
0.41 /5.1 ↔3.08
0.40 /5.08 ↔2.89
0.40 /5.09 ↔2.94
0.35 /4.23 ↔2.13

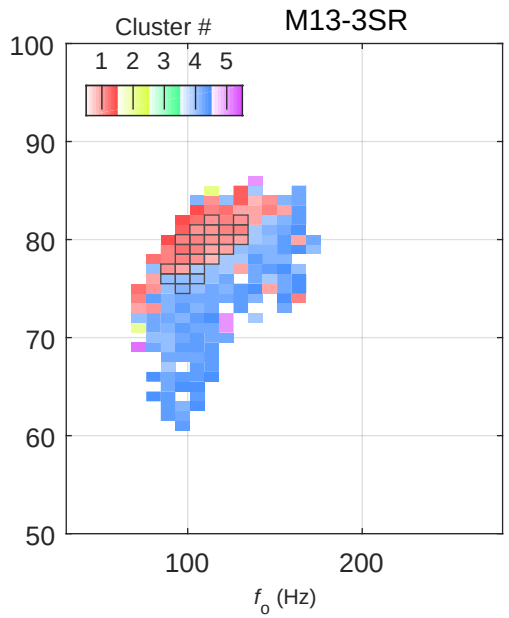

Qci Cell-Means
M12-3SR
0.2 0.4 0.6
Q Δ Cell-Means
M12-3SR
1 2 4 7 10
Qsi Cell-Means
M12-3SR
1 2 3 4 5
CSE Cell-Means
M12-3SR
0 5 10
Cluster #
M12-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f o (Hz)
Qci /Q Δ ↔Qsi
Cluster #
EGG cycle time (%)
0.47
/3.98
↔2.39
0.48
/4.13
↔2.48
0.50
/4.13
↔2.61
0.42
/3.94
↔2.12
0.44
/2.88
↔1.97

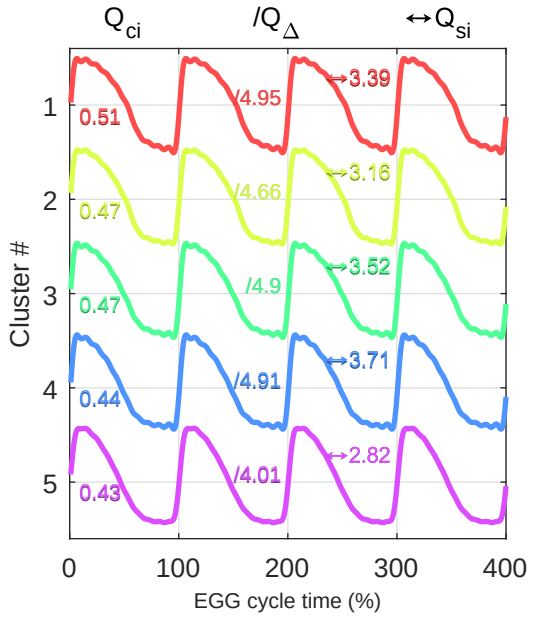

Q_{ci} Cell-Means
M13-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

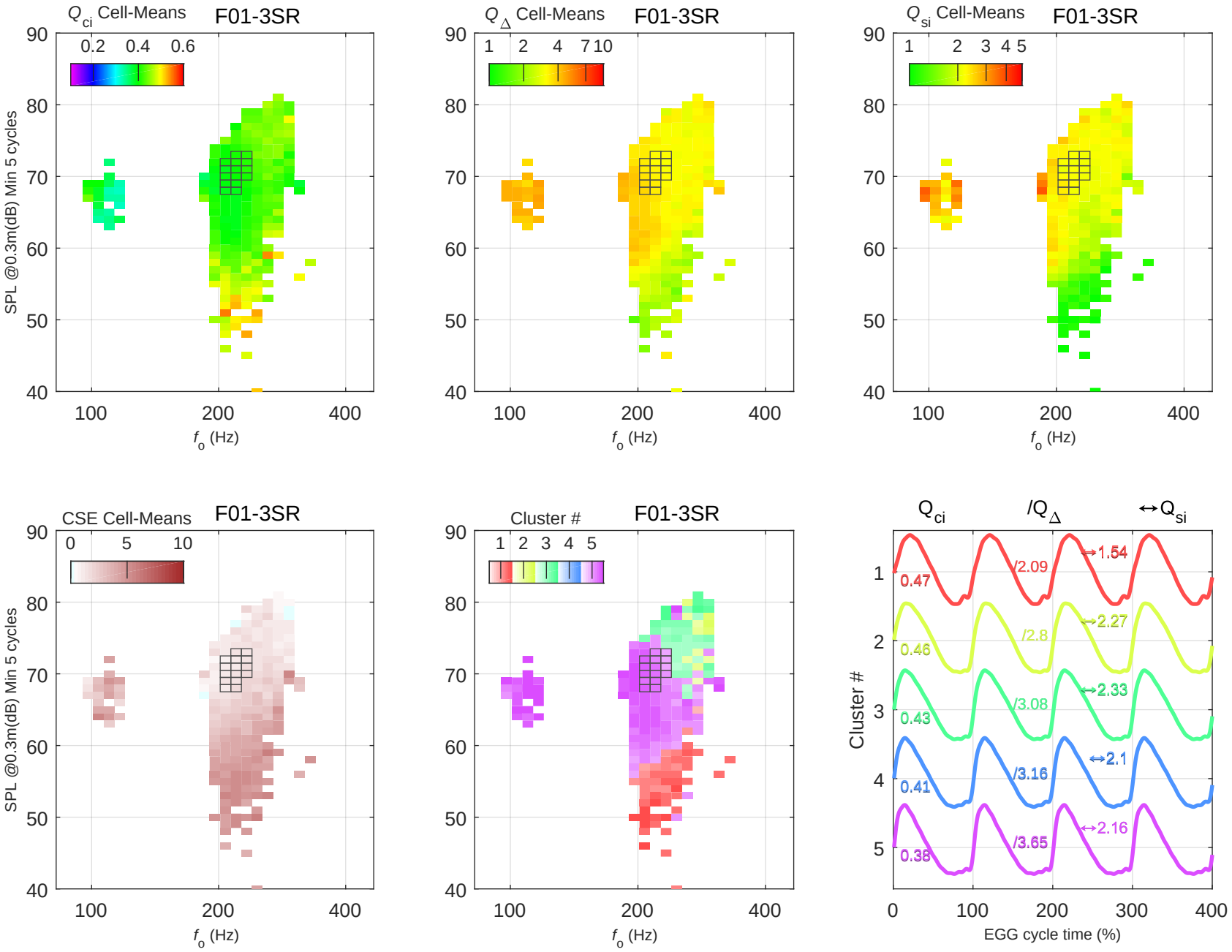

Q_{Δ} Cell-Means
M13-3SR
1 2 4 7 10
f_o (Hz)

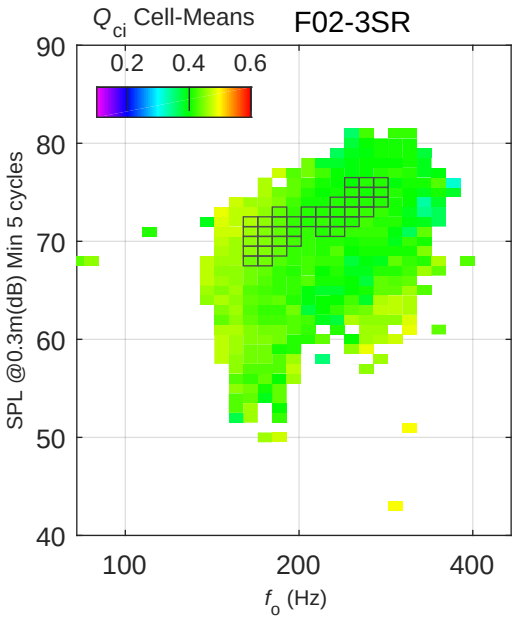

Q_{si} Cell-Means
M13-3SR
1 2 3 4 5
f_o (Hz)

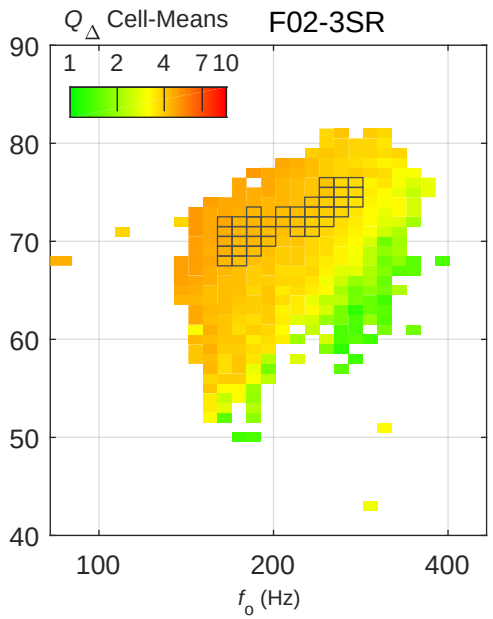

CSE Cell-Means
M13-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

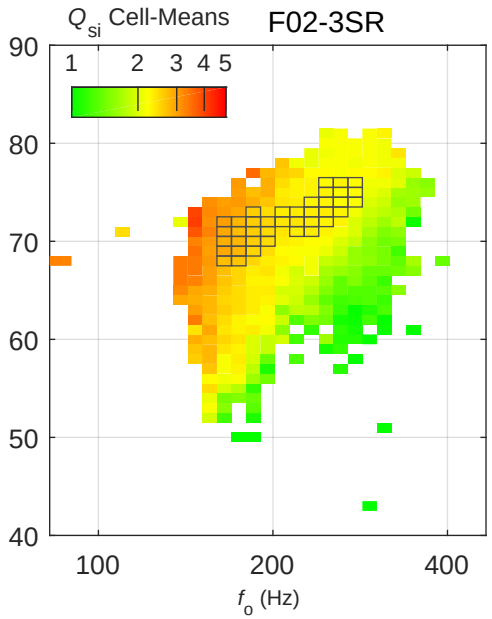

Cluster #
M13-3SR
1 2 3 4 5
f_o (Hz)

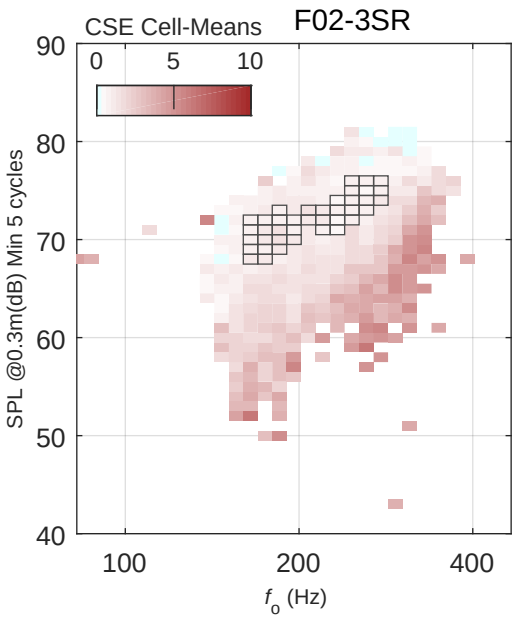

Q_{ci} /Q_{Δ} ↔Q_{si}
0.51 /4.95 ↔3.39
0.47 /4.66 ↔3.16
0.47 /4.9 ↔3.52
0.44 /4.91 ↔3.71
0.43 /4.01 ↔2.82
Cluster #
EGG cycle time (%)

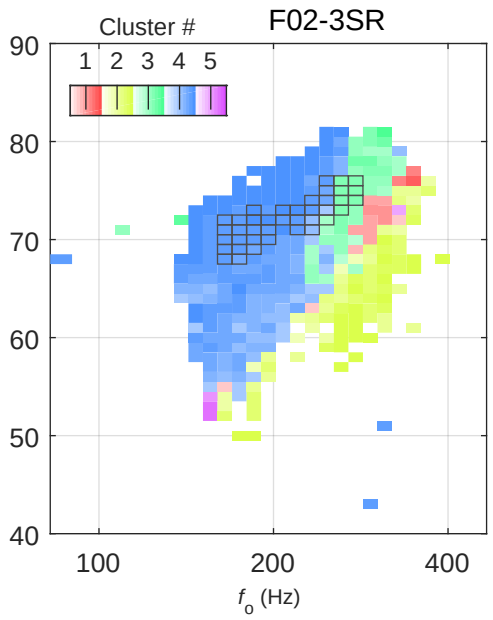

Q_{ci} Cell-Means
F01-3SR
0.2 0.4 0.6
Q_{Δ} Cell-Means
F01-3SR
1 2 4 7 10
Q_{si} Cell-Means
F01-3SR
1 2 3 4 5
CSE Cell-Means
F01-3SR
0 5 10
Cluster #
F01-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)
Q_{ci} /Q_{Δ} ↔Q_{si}
Cluster #
EGG cycle time (%)
0.47 /2.09 ↔1.54
0.46 /2.8 ↔2.27
0.43 /3.08 ↔2.33
0.41 /3.16 ↔2.1
0.38 /3.65 ↔2.16

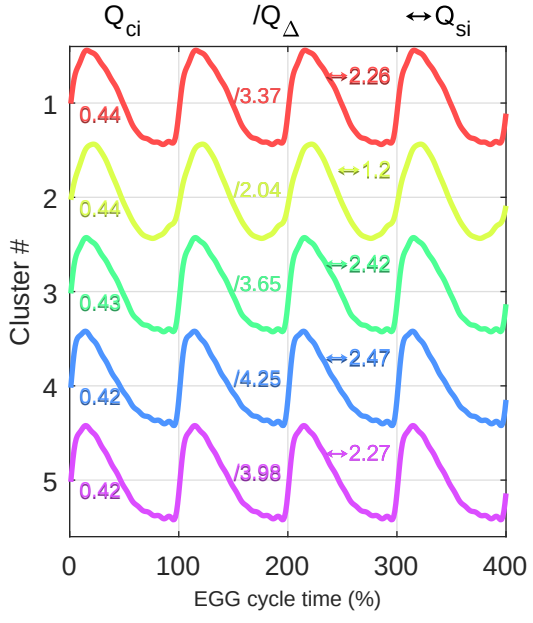

Qci Cell-Means
F02-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

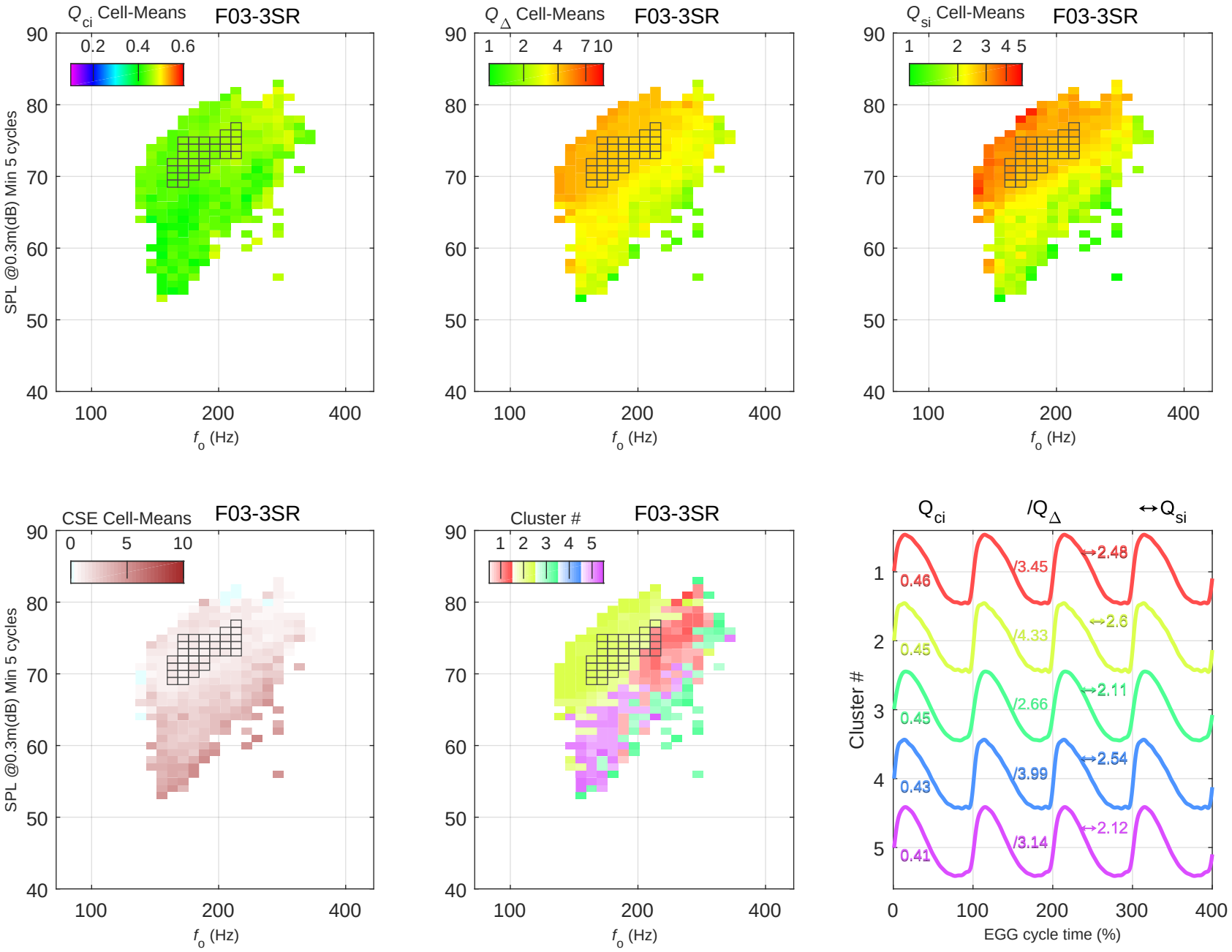

Q Δ Cell-Means
F02-3SR
1 2 4 7 10
fo (Hz)

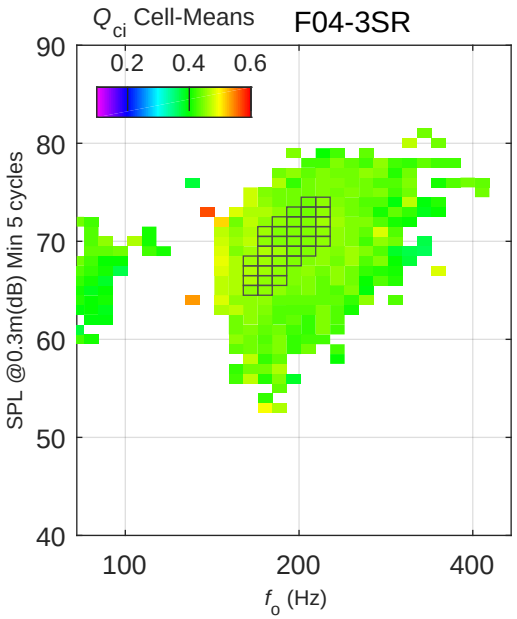

Qsi Cell-Means
F02-3SR
1 2 3 4 5
fo (Hz)

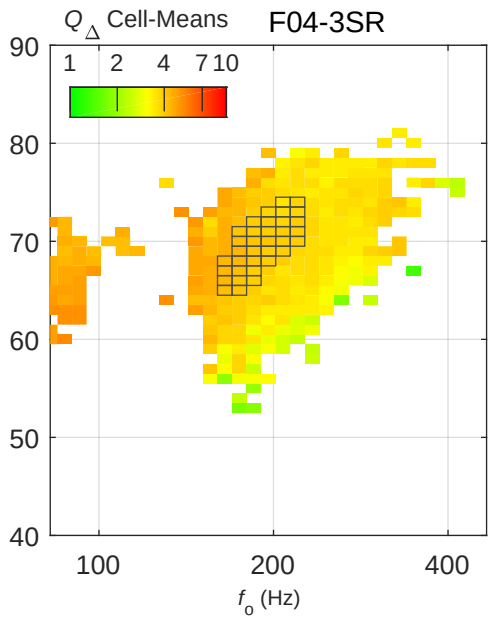

CSE Cell-Means
F02-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

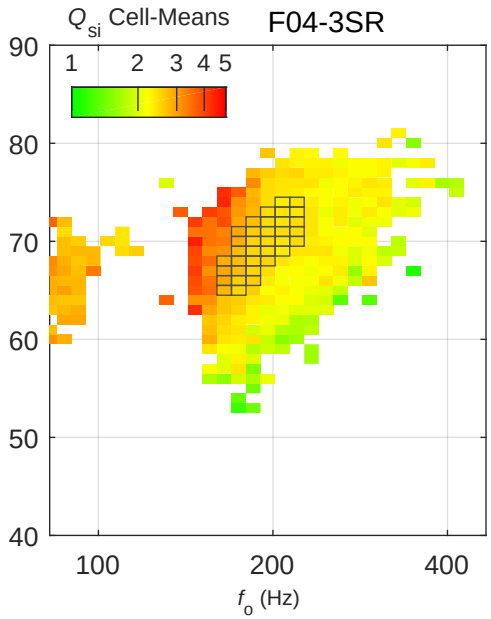

Cluster #
F02-3SR
1 2 3 4 5
fo (Hz)

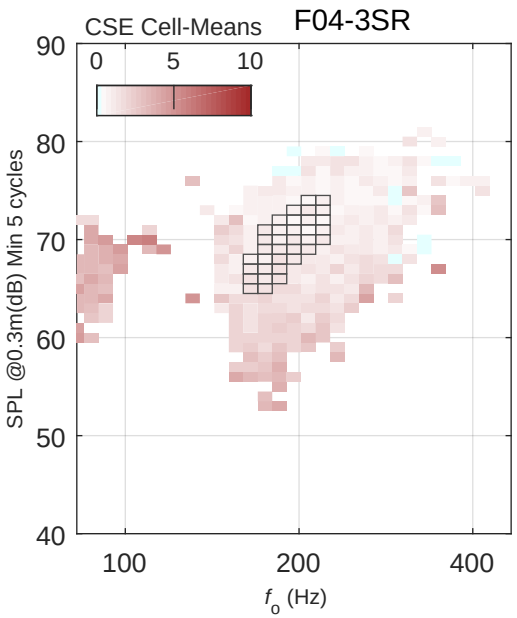

Qci /Q Δ ↔Qsi
0.44 /3.37 ↔2.26
0.44 /2.04 ↔1.2
0.43 /3.65 ↔2.42
0.42 /4.25 ↔2.47
0.42 /3.98 ↔2.27
Cluster #
EGG cycle time (%)

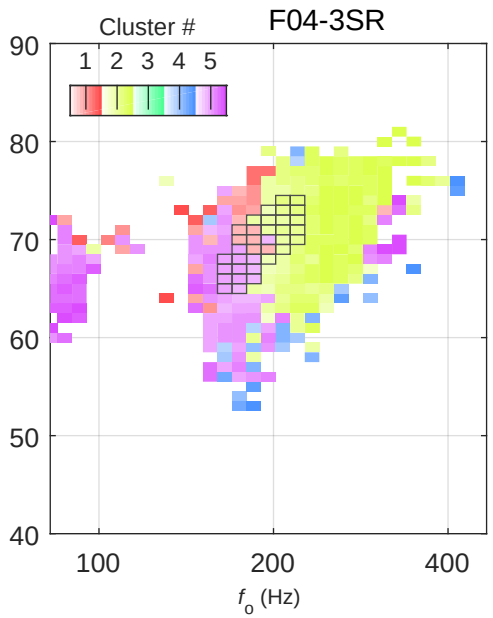

Q_{ci} Cell-Means
F03-3SR
0.2 0.4 0.6
Q_{Δ} Cell-Means
F03-3SR
1 2 4 7 10
Q_{si} Cell-Means
F03-3SR
1 2 3 4 5
CSE Cell-Means
F03-3SR
0 5 10
Cluster #
F03-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)
Q_{ci} /Q_{Δ} ↔Q_{si}
Cluster #
0.46 /3.45 ↔2.48
0.45 /4.33 ↔2.6
0.45 /2.66 ↔2.11
0.43 /3.99 ↔2.54
0.41 /3.14 ↔2.12
EGG cycle time (%)

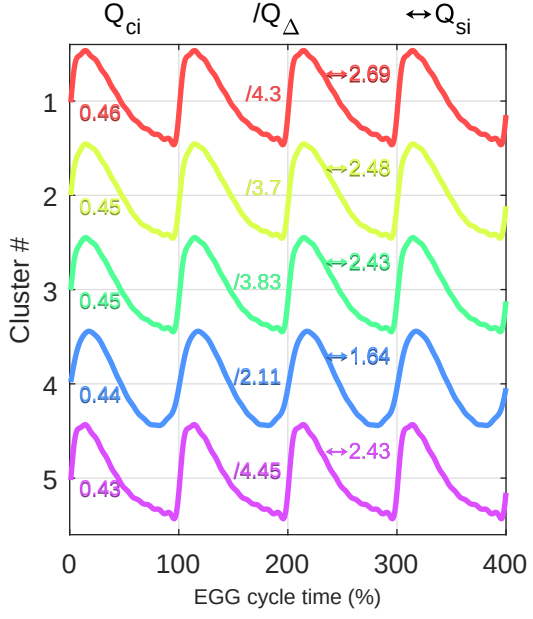

Qci Cell-Means
F04-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

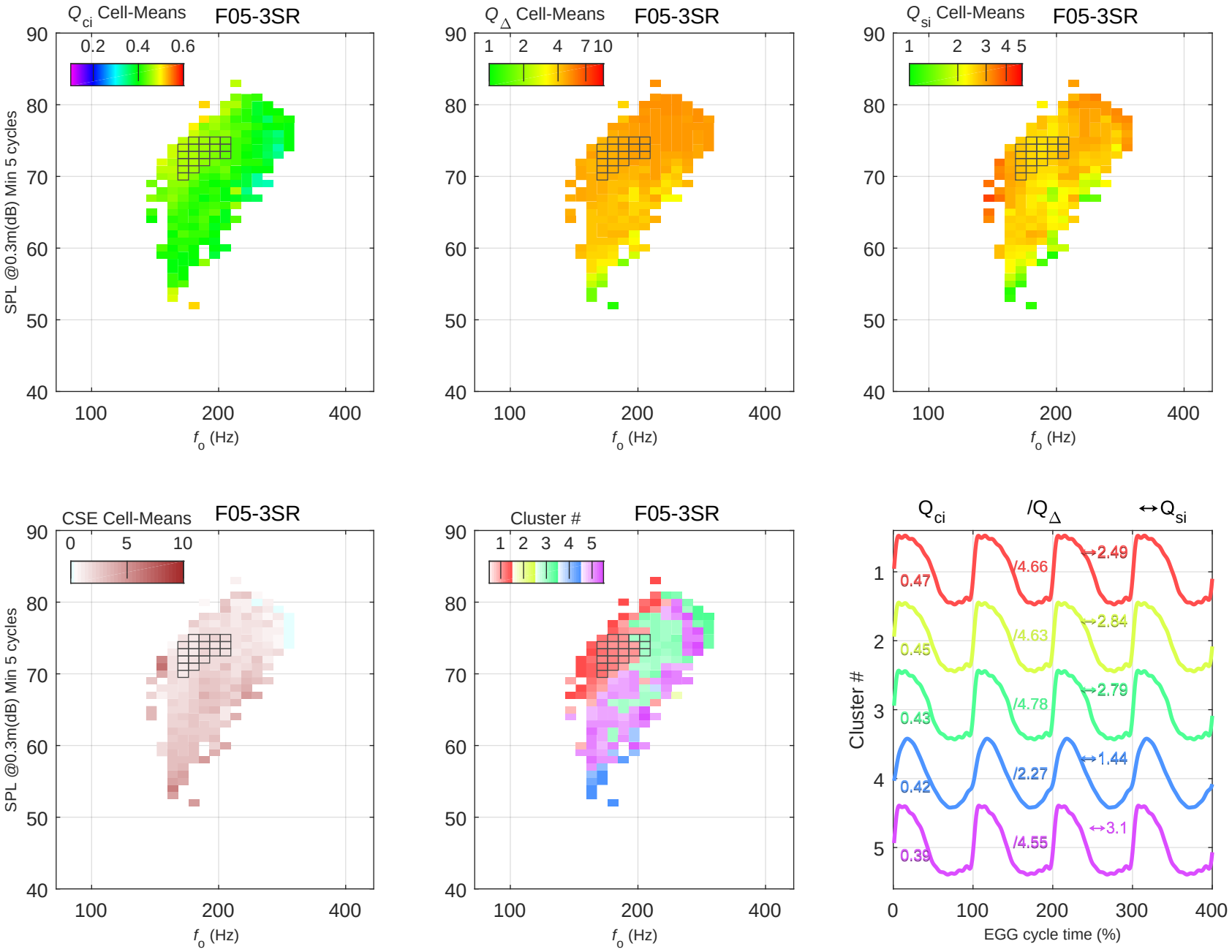

Q Δ Cell-Means
F04-3SR
1 2 4 7 10
fo (Hz)

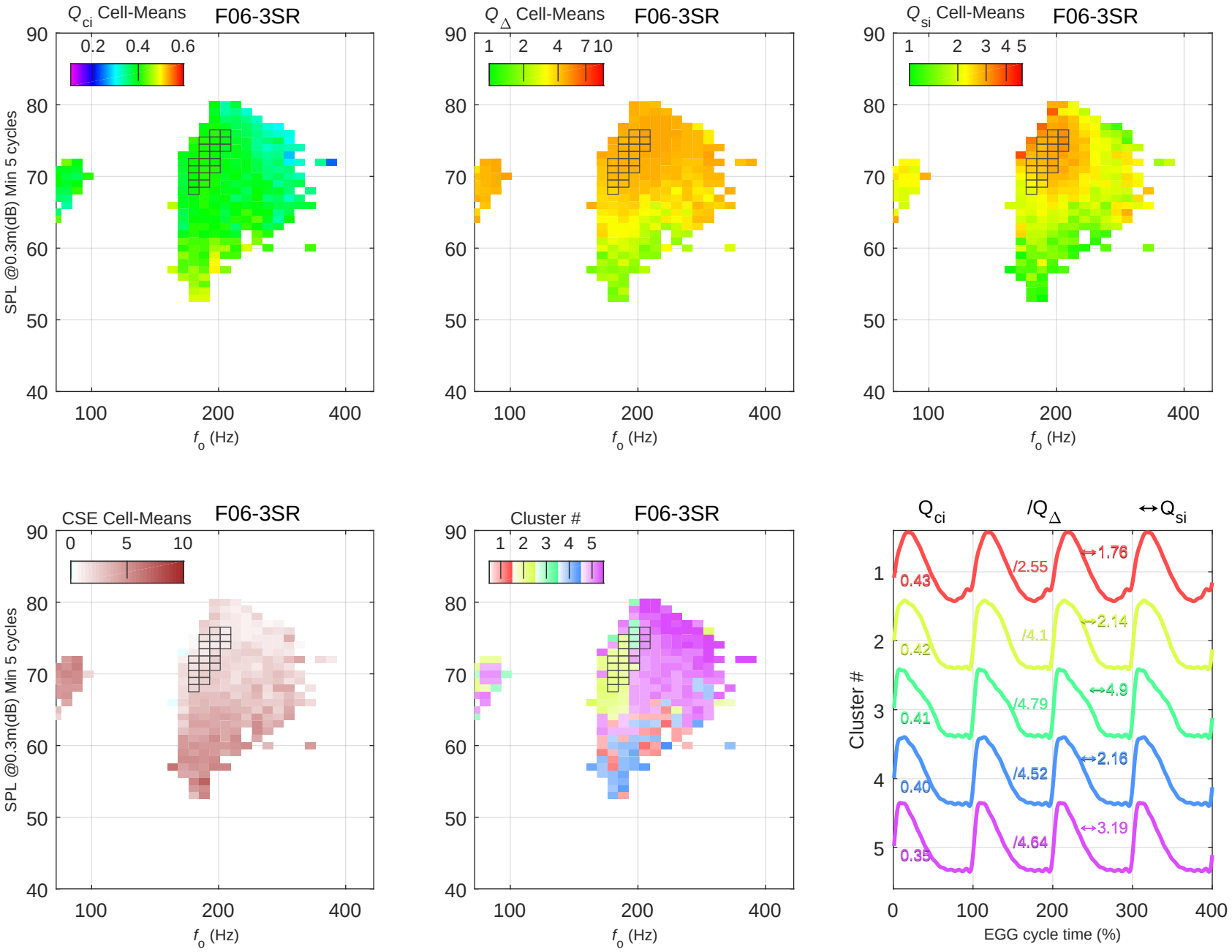

Qsi Cell-Means
F04-3SR
1 2 3 4 5
fo (Hz)

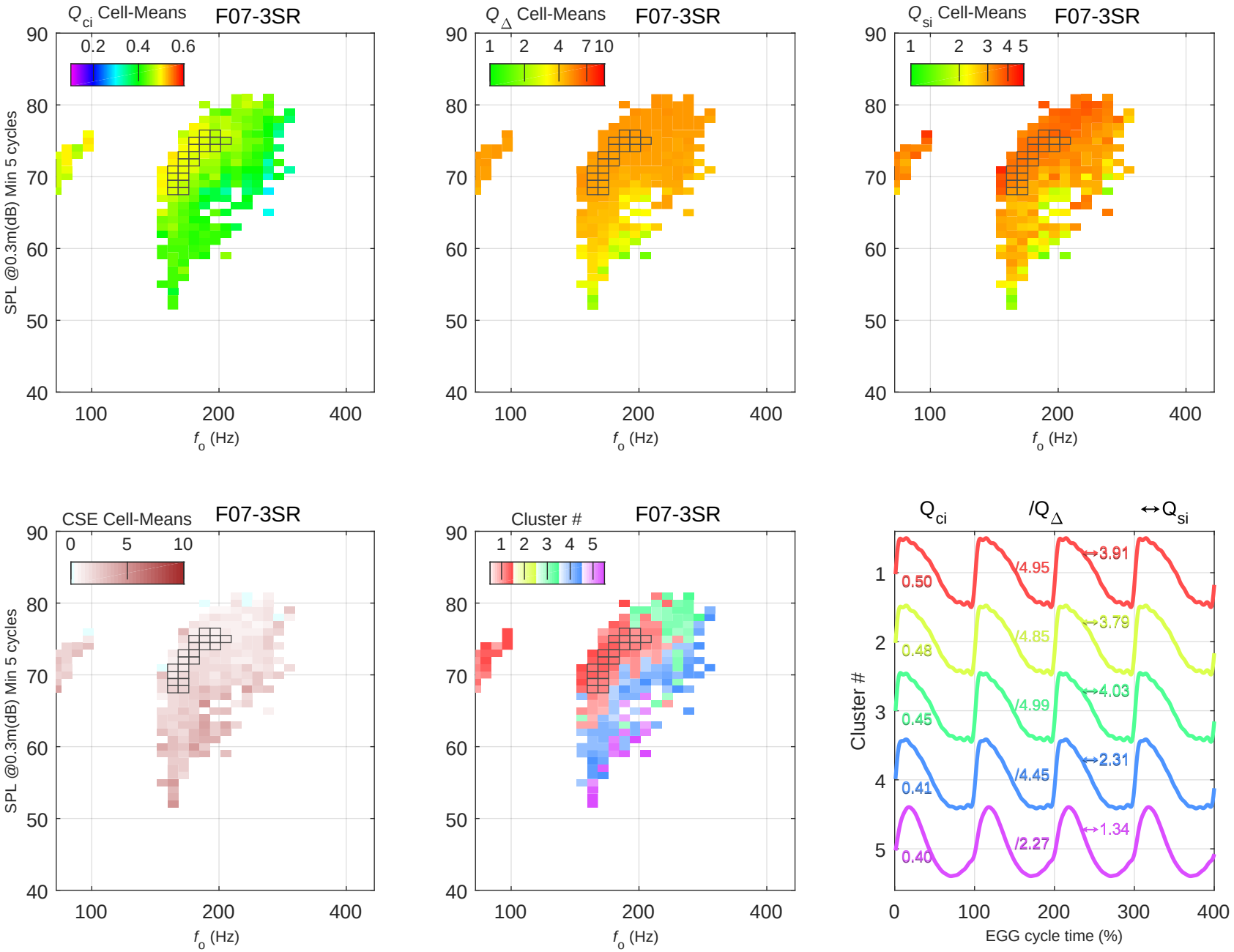

CSE Cell-Means
F04-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

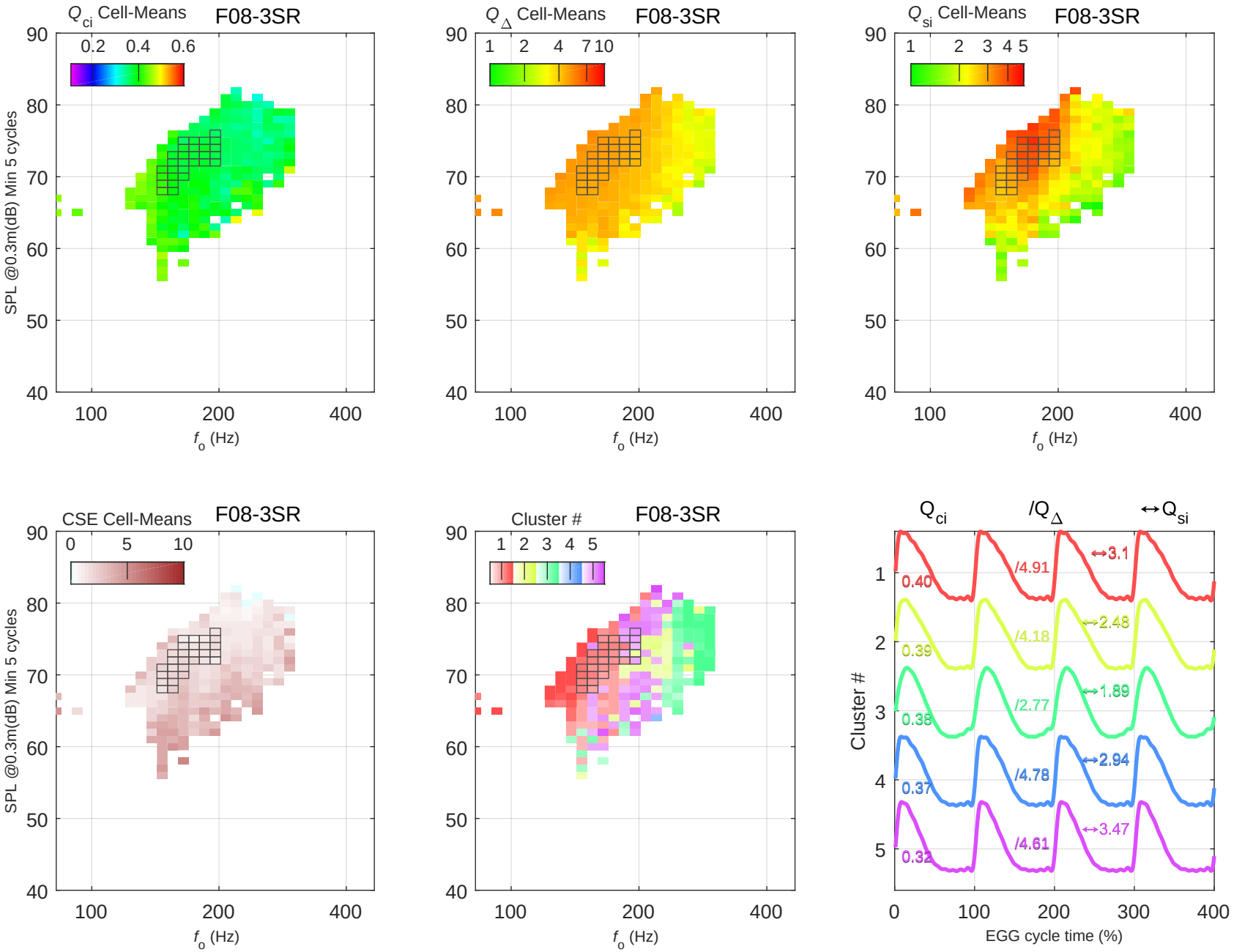

Cluster #
F04-3SR
1 2 3 4 5
fo (Hz)

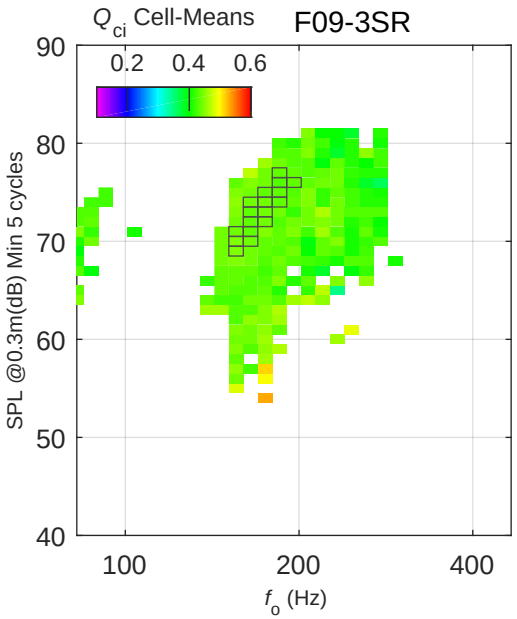

Qci /Q Δ ↔Qsi
Cluster #
0.46
/4.3
↔2.69
0.45
/3.7
↔2.48
0.45
/3.83
↔2.43
0.44
/2.11
↔1.64
0.43
/4.45
↔2.43
EGG cycle time (%)

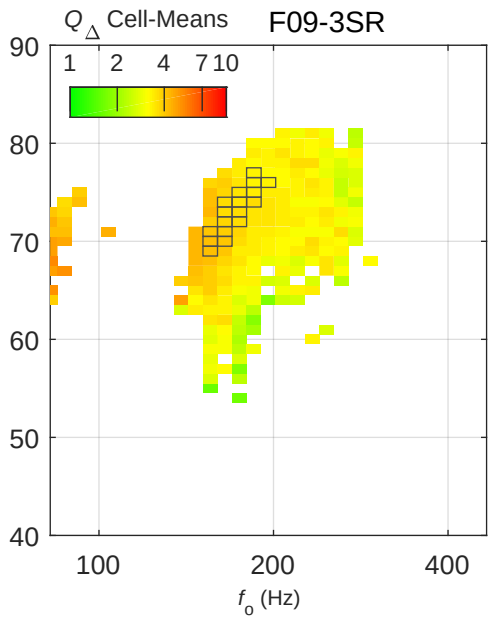

Q_{ci} Cell-Means F05-3SR
0.2 0.4 0.6
Q_{Δ} Cell-Means F05-3SR
1 2 4 7 10
Q_{si} Cell-Means F05-3SR
1 2 3 4 5
CSE Cell-Means F05-3SR
0 5 10
Cluster # F05-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)
90
80
70
60
50
40
100
200
400
Q_{ci} /Q_{Δ} ↔Q_{si}
0.47 /4.66 ↔2.49
0.45 /4.63 ↔2.84
0.43 /4.78 ↔2.79
0.42 /2.27 ↔1.44
0.39 /4.55 ↔3.1
Cluster #
1
2
3
4
5
0
100
200
300
400
EGG cycle time (%)

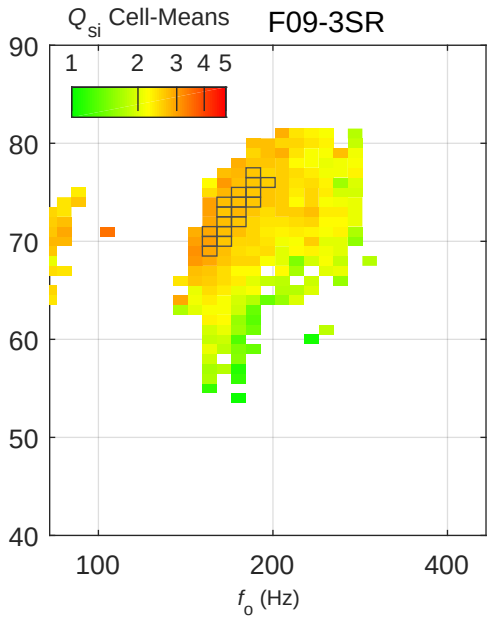

Q_{ci} Cell-Means
F06-3SR
0.2 0.4 0.6
Q_{Δ} Cell-Means
F06-3SR
1 2 4 7 10
Q_{si} Cell-Means
F06-3SR
1 2 3 4 5
CSE Cell-Means
F06-3SR
0 5 10
Cluster #
F06-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)
Q_{ci} /Q_{Δ} ↔Q_{si}
0.43 /2.55 ↔1.76
0.42 /4.1 ↔2.14
0.41 /4.79 ↔4.9
0.40 /4.52 ↔2.16
0.35 /4.64 ↔3.19
Cluster #
EGG cycle time (%)

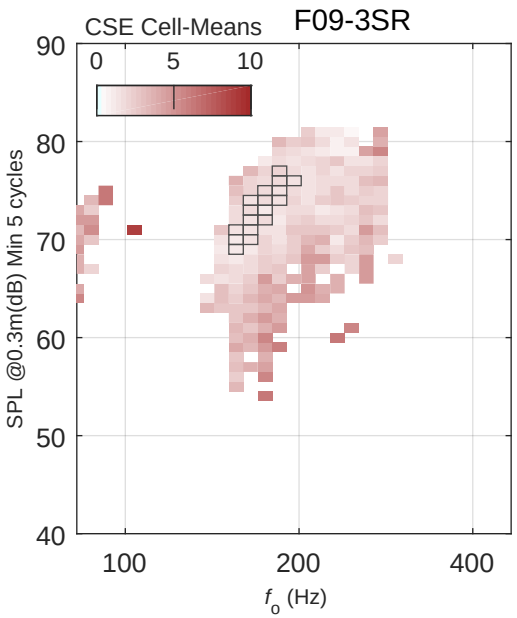

Qci Cell-Means
F07-3SR
0.2 0.4 0.6
QΔ Cell-Means
F07-3SR
1 2 4 7 10
Qsi Cell-Means
F07-3SR
1 2 3 4 5
CSE Cell-Means
F07-3SR
0 5 10
Cluster #
F07-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
Cluster #
EGG cycle time (%)
0.50
/4.95
↔3.91
0.48
/4.85
↔3.79
0.45
/4.99
↔4.03
0.41
/4.45
↔2.31
0.40
/2.27
↔1.34

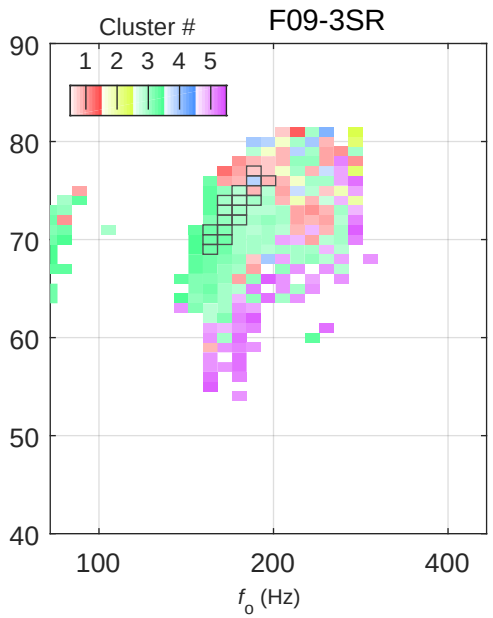

Qci Cell-Means
F08-3SR
0.2 0.4 0.6
QΔ Cell-Means
F08-3SR
1 2 4 7 10
Qsi Cell-Means
F08-3SR
1 2 3 4 5
CSE Cell-Means
F08-3SR
0 5 10
Cluster #
F08-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
Cluster #
EGG cycle time (%)
0.40
/4.91
↔3.1
0.39
/4.18
↔2.48
0.38
/2.77
↔1.89
0.37
/4.78
↔2.94
0.32
/4.61
↔3.47

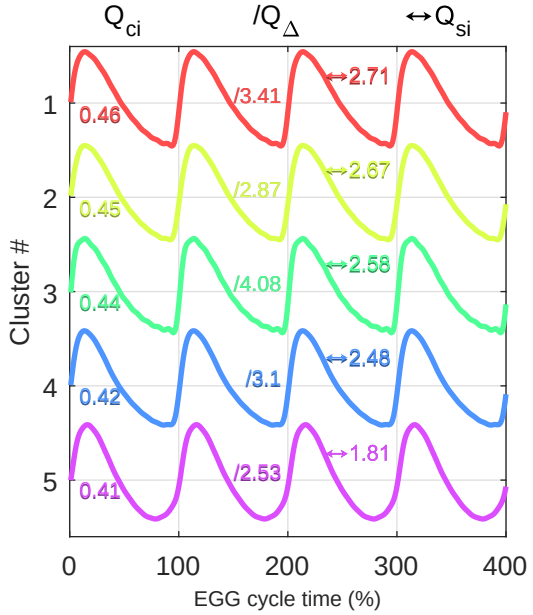

Qci Cell-Means
F09-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

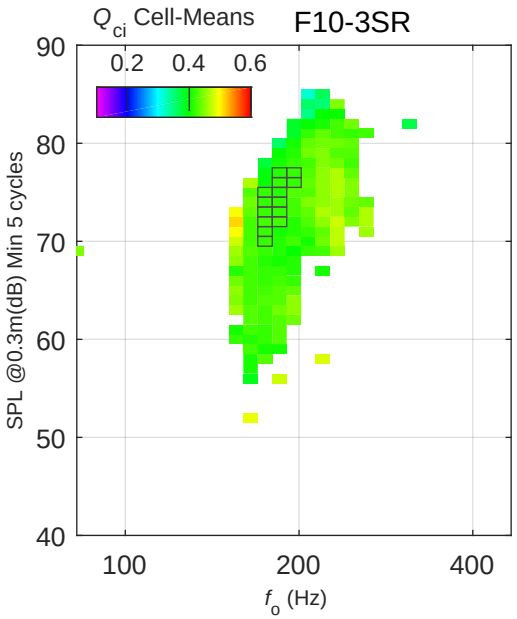

Q Δ Cell-Means
F09-3SR
1 2 4 7 10
fo (Hz)

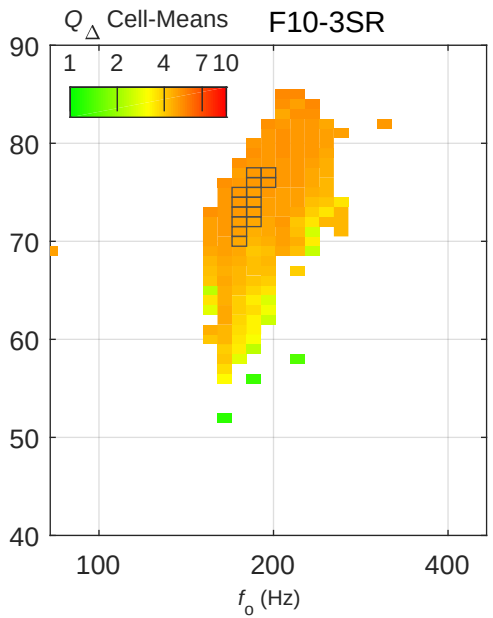

Qsi Cell-Means
F09-3SR
1 2 3 4 5
fo (Hz)

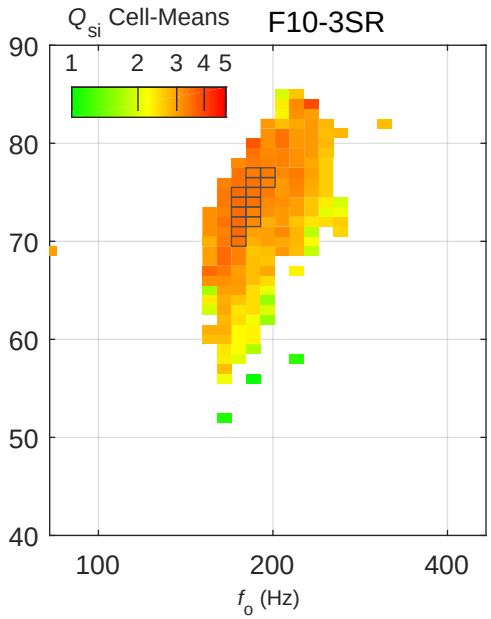

CSE Cell-Means
F09-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

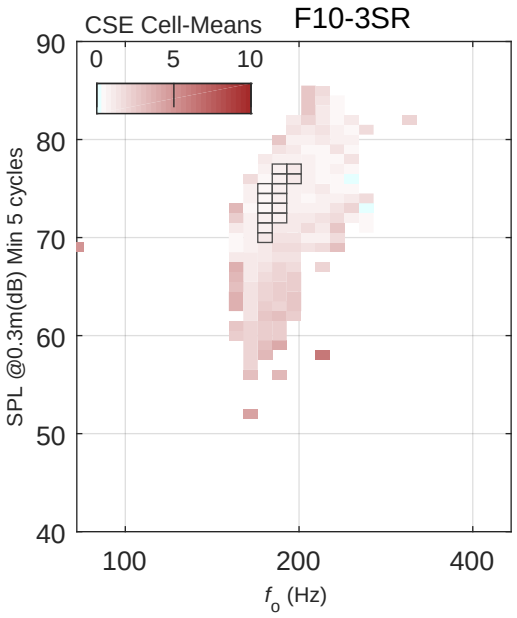

Cluster #
F09-3SR
1 2 3 4 5
fo (Hz)

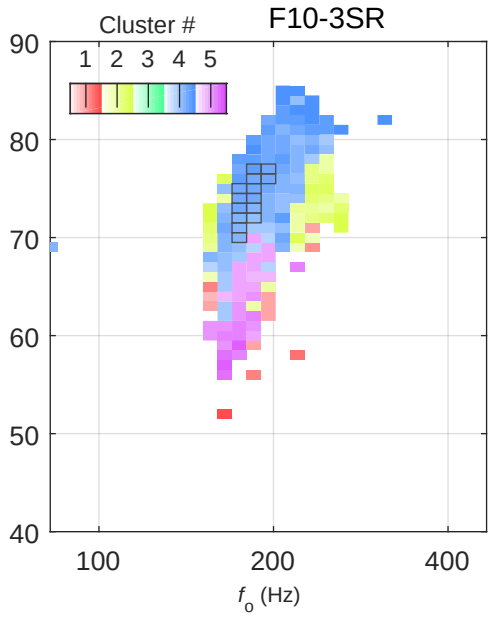

Qci /Q Δ ↔Qsi
0.46
/3.41
↔2.71
0.45
/2.87
↔2.67
0.44
/4.08
↔2.58
0.42
/3.1
↔2.48
0.41
/2.53
↔1.81
Cluster #
EGG cycle time (%)

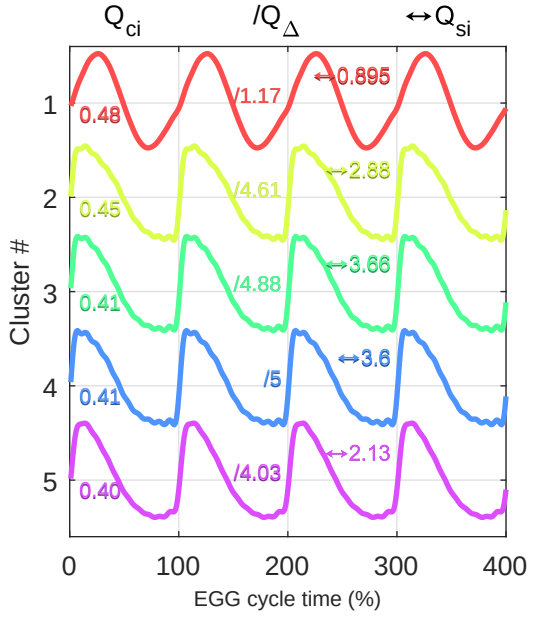

Q_{ci} Cell-Means
F10-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

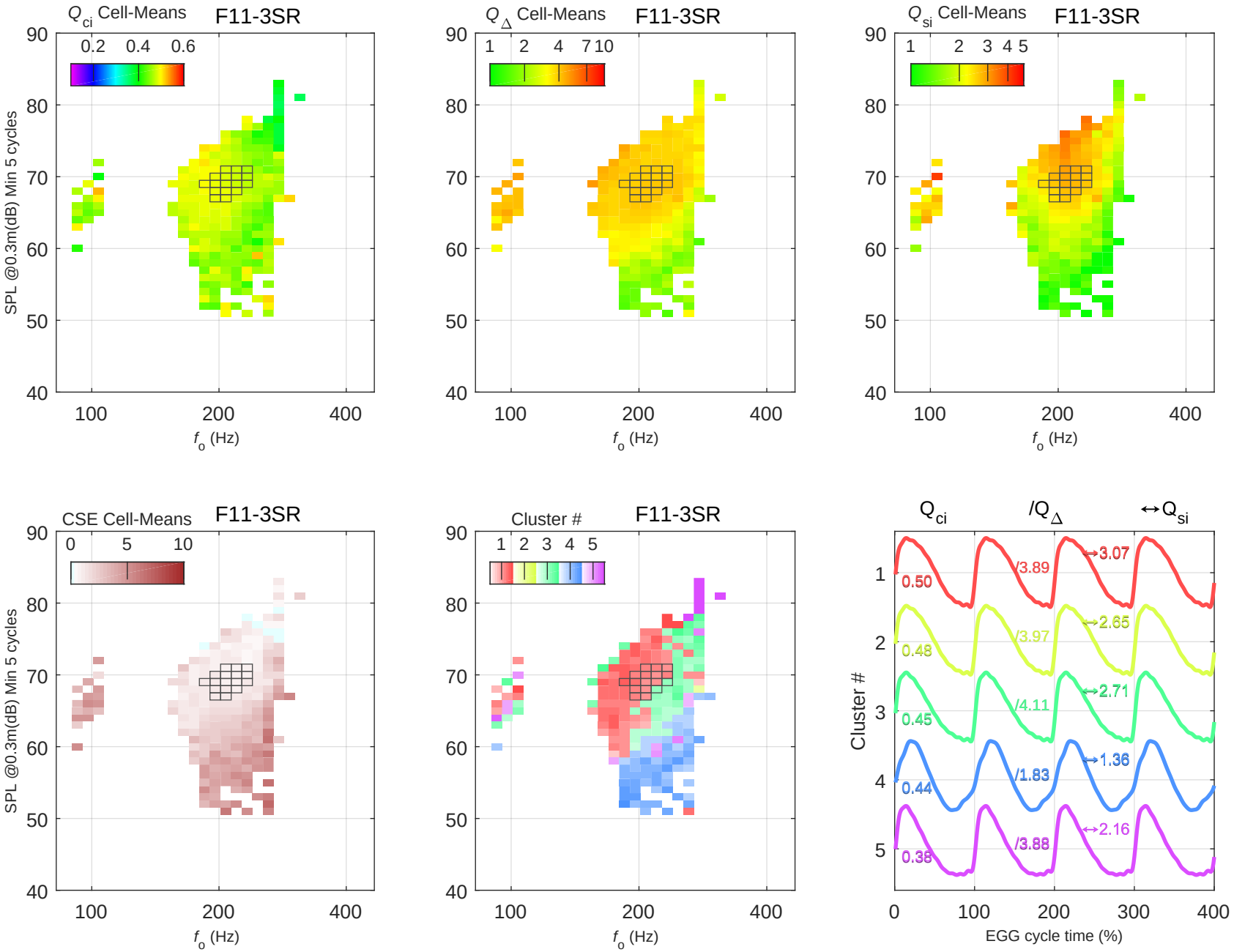

Q_{Δ} Cell-Means
F10-3SR
1 2 4 7 10
f_o (Hz)

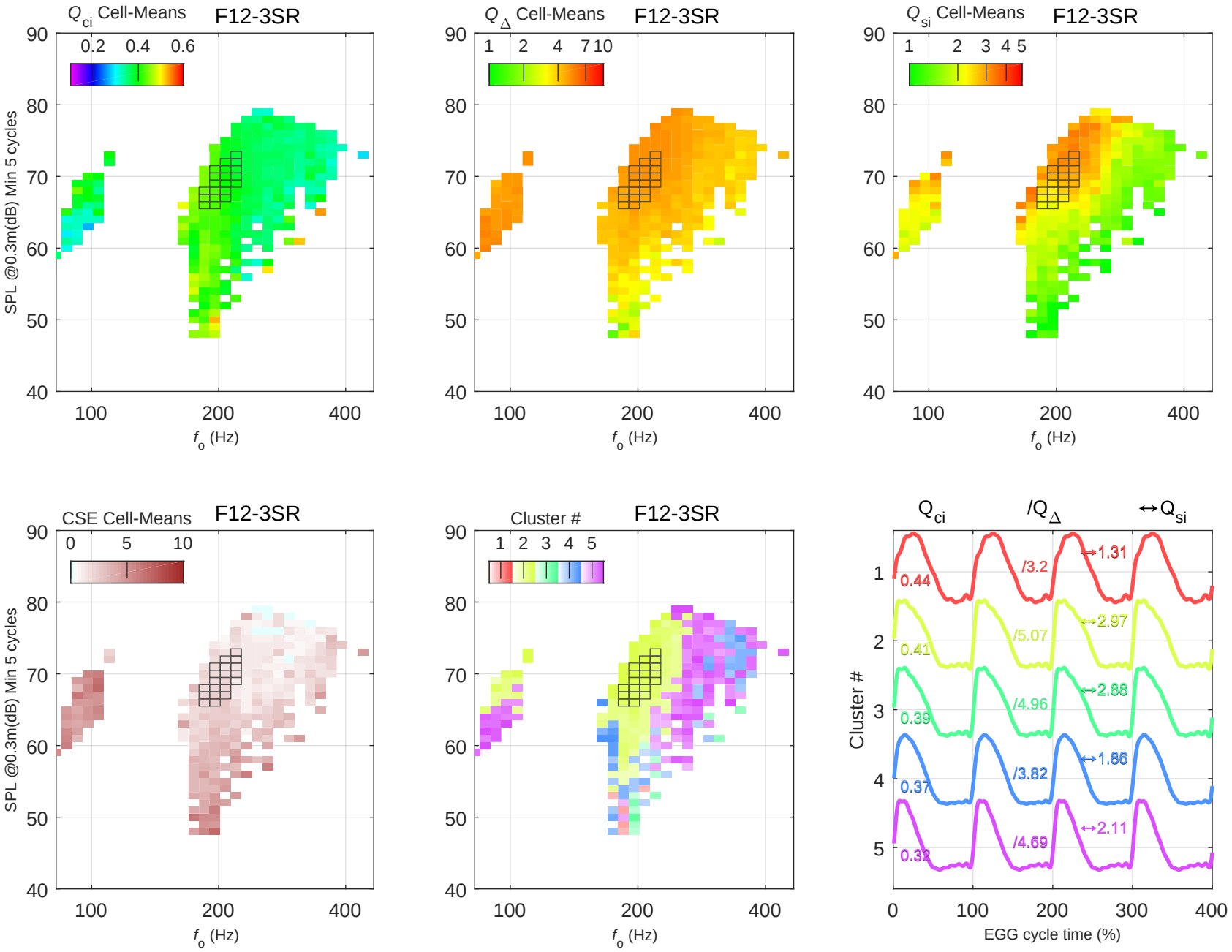

Q_{si} Cell-Means
F10-3SR
1 2 3 4 5
f_o (Hz)

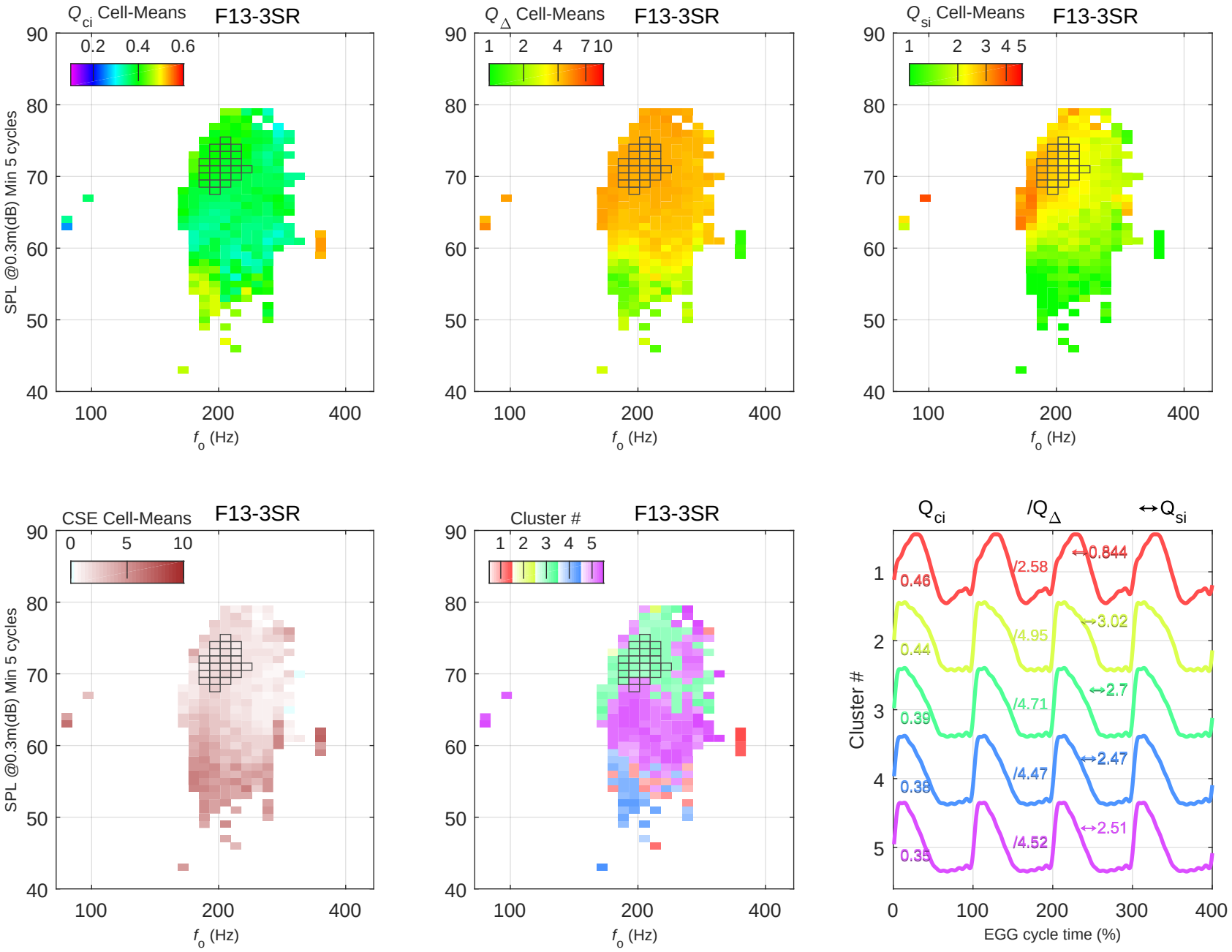

CSE Cell-Means
F10-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

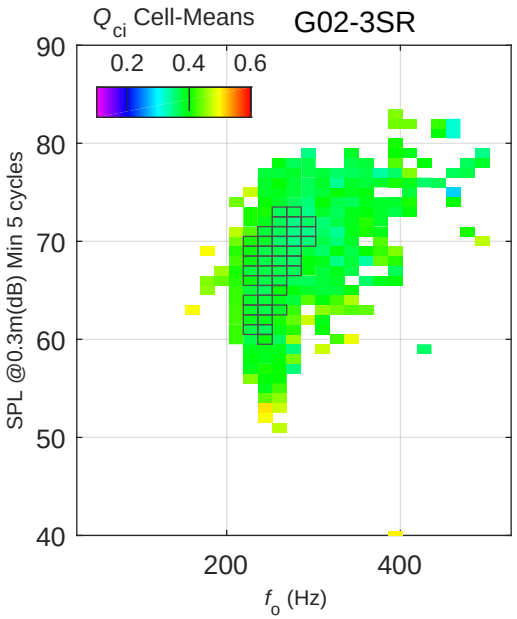

Cluster #
F10-3SR
1 2 3 4 5
f_o (Hz)

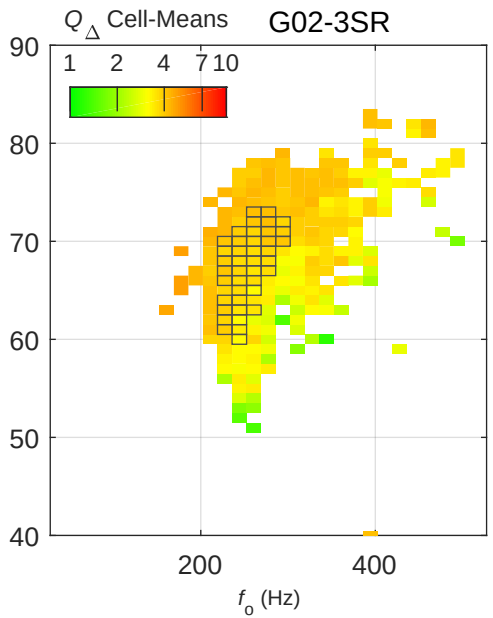

Q_{ci} /Q_{Δ} ↔Q_{si}
0.48
/1.17
↔0.895
0.45
/4.61
↔2.88
0.41
/4.88
↔3.66
0.41
/5
↔3.6
0.40
/4.03
↔2.13
Cluster #
EGG cycle time (%)

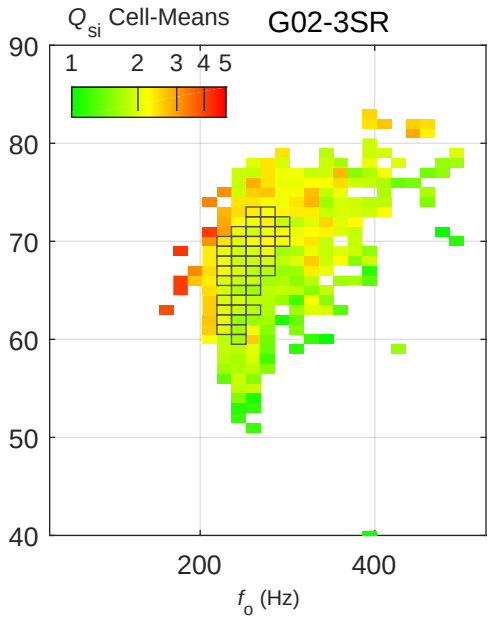

Qci Cell-Means
F11-3SR
0.2 0.4 0.6
QΔ Cell-Means
F11-3SR
1 2 4 7 10
Qsi Cell-Means
F11-3SR
1 2 3 4 5
CSE Cell-Means
F11-3SR
0 5 10
Cluster #
F11-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
Cluster #
EGG cycle time (%)
0.50
/3.89
↔3.07
0.48
/3.97
↔2.65
0.45
/4.11
↔2.71
0.44
/1.83
↔1.36
0.38
/3.88
↔2.16

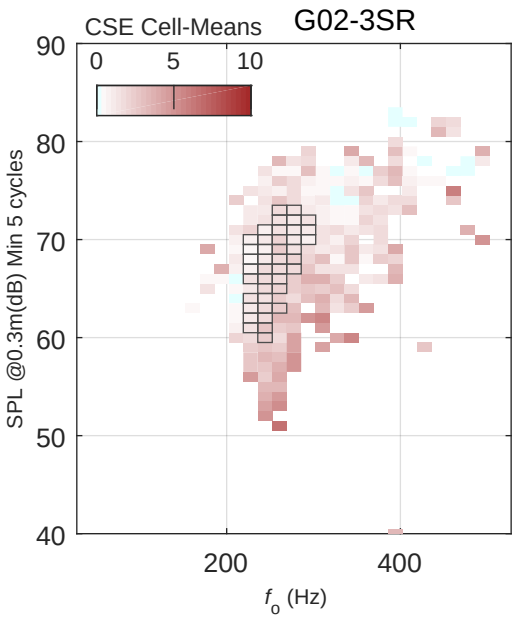

Qci Cell-Means
F12-3SR
0.2 0.4 0.6
QΔ Cell-Means
F12-3SR
1 2 4 7 10
Qsi Cell-Means
F12-3SR
1 2 3 4 5
CSE Cell-Means
F12-3SR
0 5 10
Cluster #
F12-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
Cluster #
EGG cycle time (%)
0.44
/3.2
↔1.31
0.41
/5.07
↔2.97
0.39
/4.96
↔2.88
0.37
/3.82
↔1.86
0.32
/4.69
↔2.11

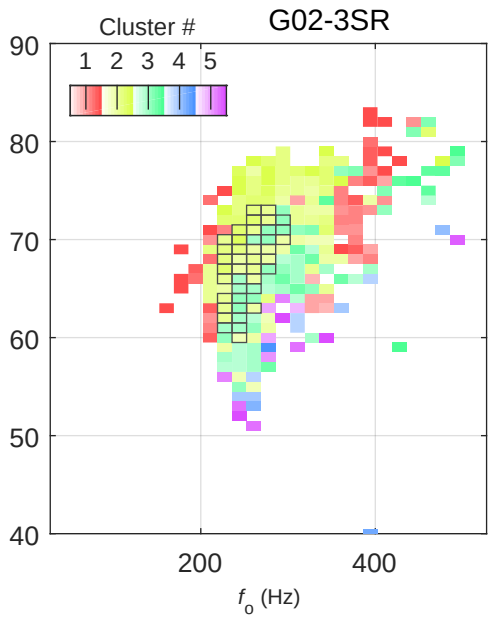

Qci Cell-Means
F13-3SR
0.2 0.4 0.6
QΔ Cell-Means
F13-3SR
1 2 4 7 10
Qsi Cell-Means
F13-3SR
1 2 3 4 5
CSE Cell-Means
F13-3SR
0 5 10
Cluster #
F13-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
Cluster #
EGG cycle time (%)
0.46
/2.58
↔0.844
0.44
/4.95
↔3.02
0.39
/4.71
↔2.7
0.38
/4.47
↔2.47
0.35
/4.52
↔2.51

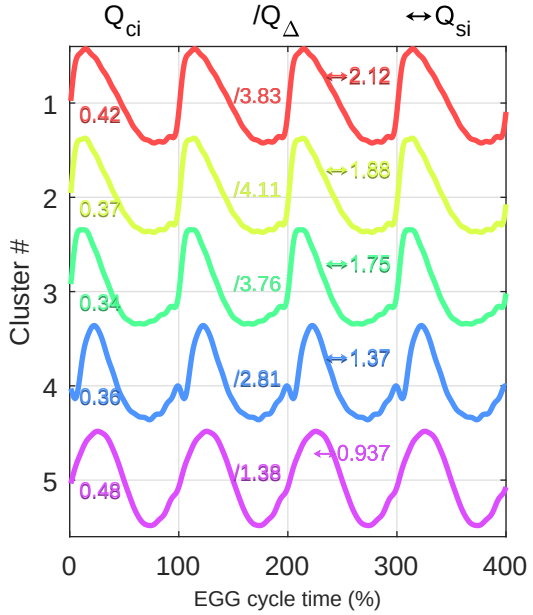

Q_{ci} Cell-Means
G02-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

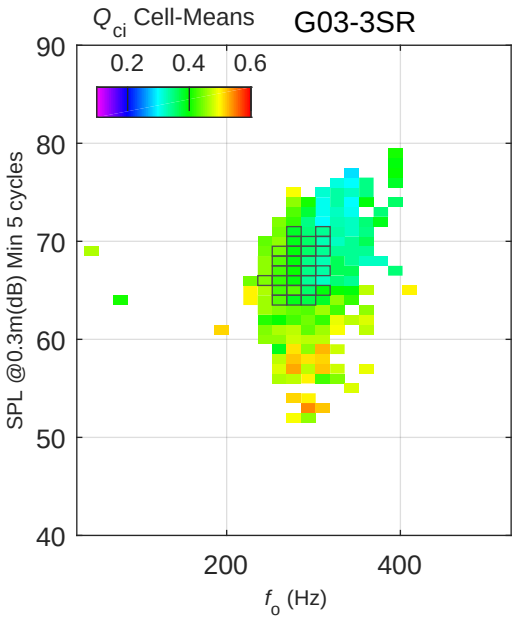

Q_Δ Cell-Means
G02-3SR
1 2 4 7 10
f_o (Hz)

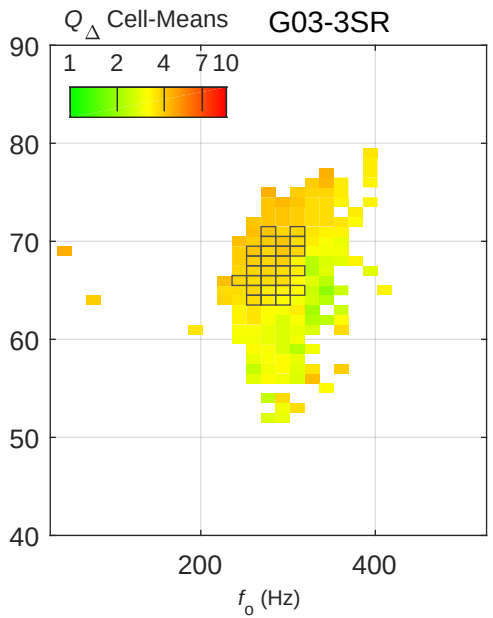

Q_{si} Cell-Means
G02-3SR
1 2 3 4 5
f_o (Hz)

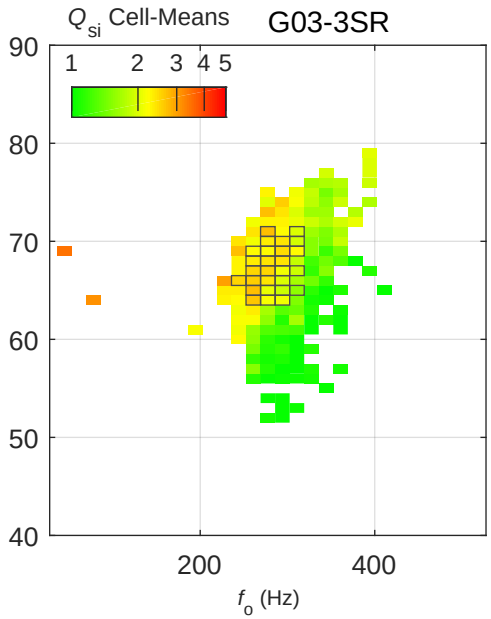

CSE Cell-Means
G02-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

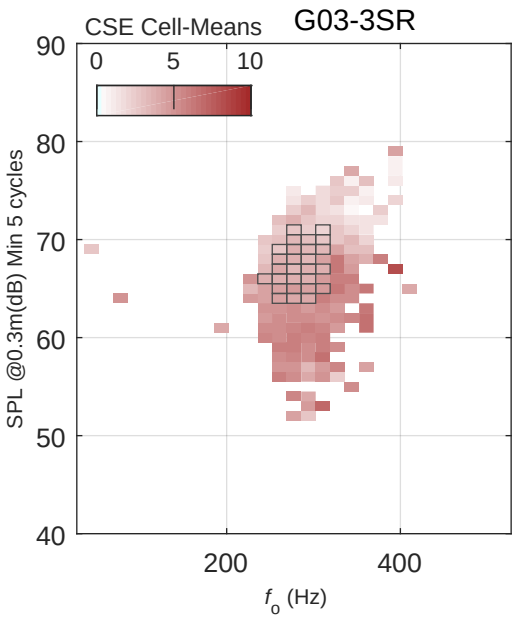

Cluster #
G02-3SR
1 2 3 4 5
f_o (Hz)

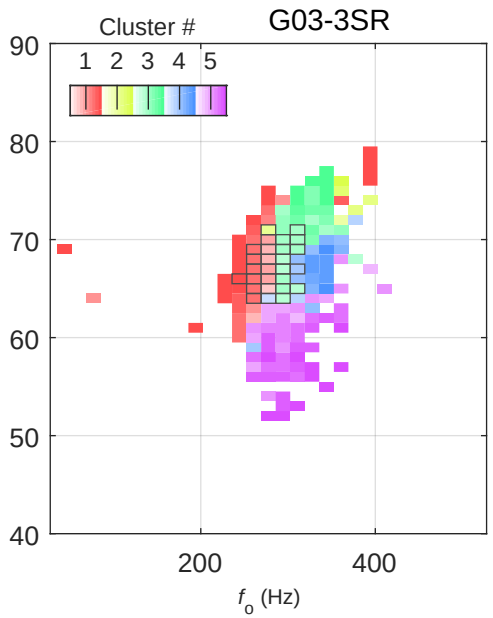

Q_{ci} /Q_Δ ↔Q_{si}
0.42 /3.83 ↔2.12
0.37 /4.11 ↔1.88
0.34 /3.76 ↔1.75
0.36 /2.81 ↔1.37
0.48 /1.38 ↔0.937
Cluster #
EGG cycle time (%)

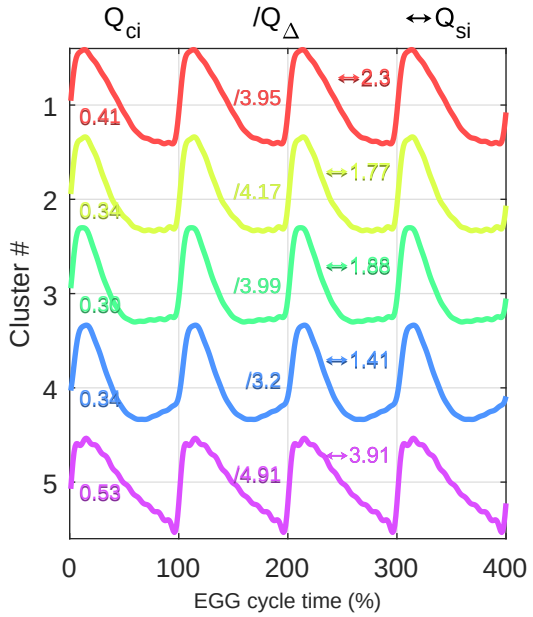

Q_{ci} Cell-Means
G03-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

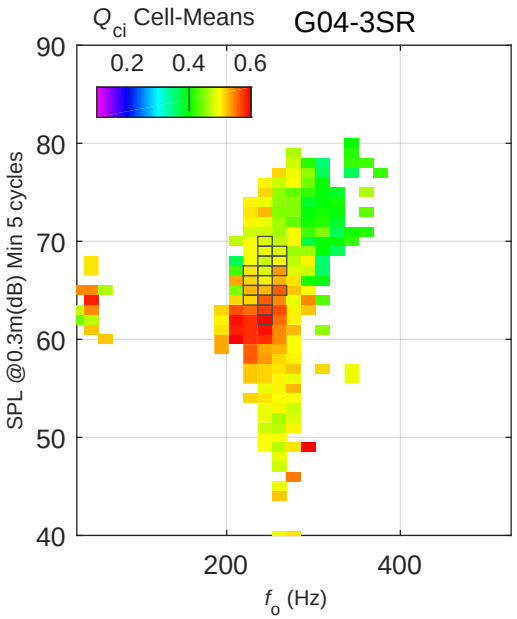

Q_Δ Cell-Means
G03-3SR
1 2 4 7 10
f_o (Hz)

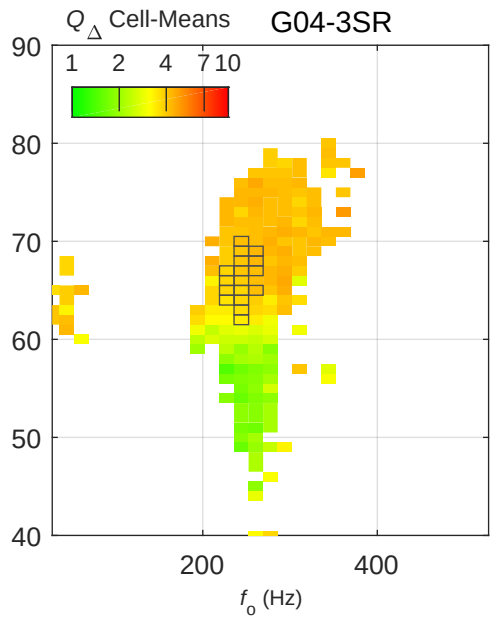

Q_{si} Cell-Means
G03-3SR
1 2 3 4 5
f_o (Hz)

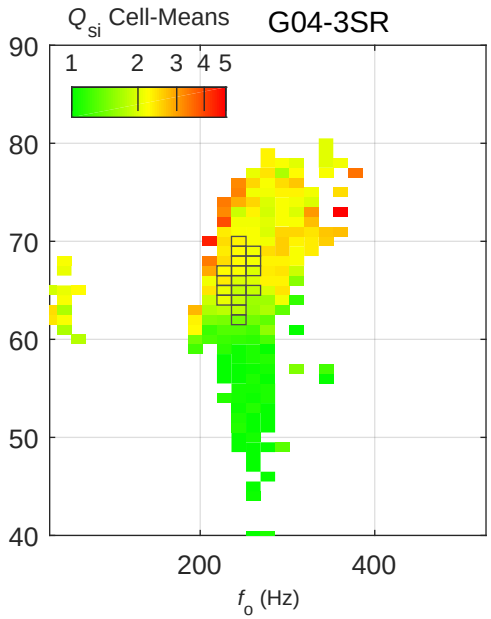

CSE Cell-Means
G03-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

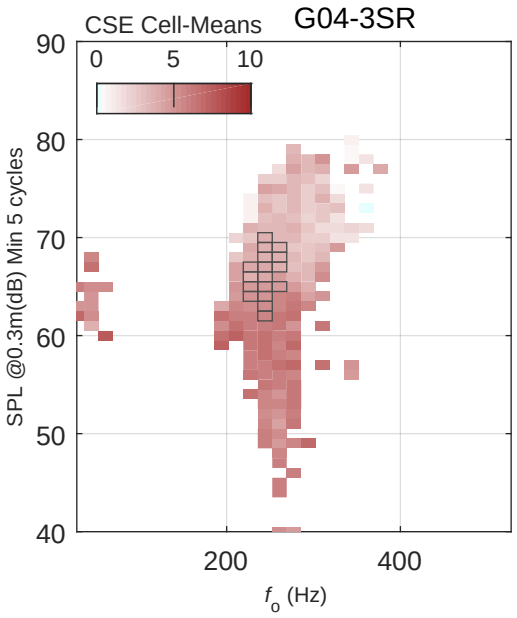

Cluster #
G03-3SR
1 2 3 4 5
f_o (Hz)

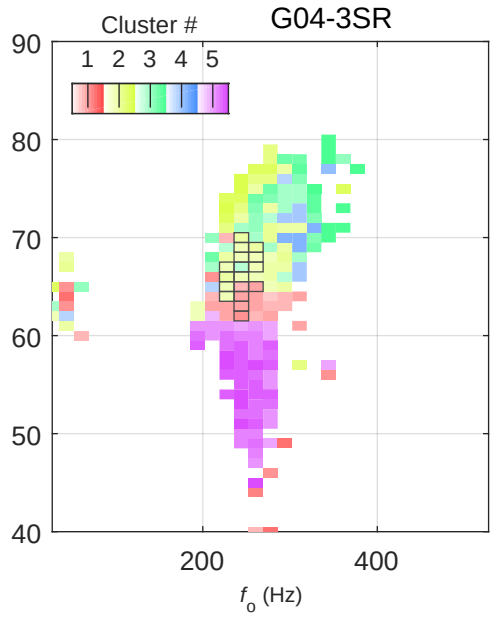

Q_{ci} /Q_Δ ↔Q_{si}
0.41 /3.95 ↔2.3
0.34 /4.17 ↔1.77
0.30 /3.99 ↔1.88
0.34 /3.2 ↔1.41
0.53 /4.91 ↔3.91
Cluster #
EGG cycle time (%)

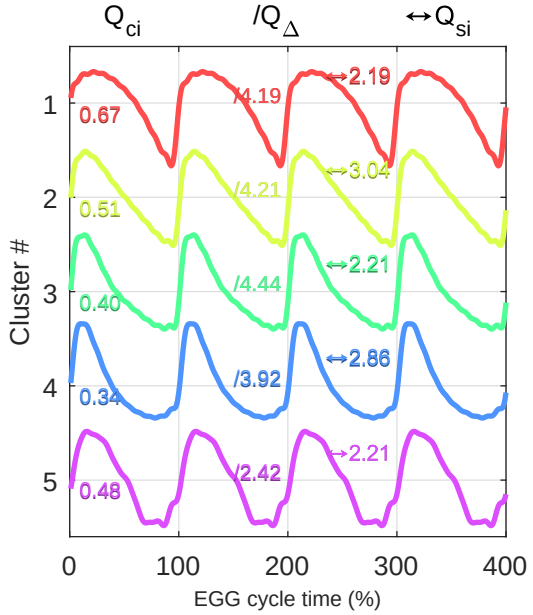

Q_{ci} Cell-Means
G04-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

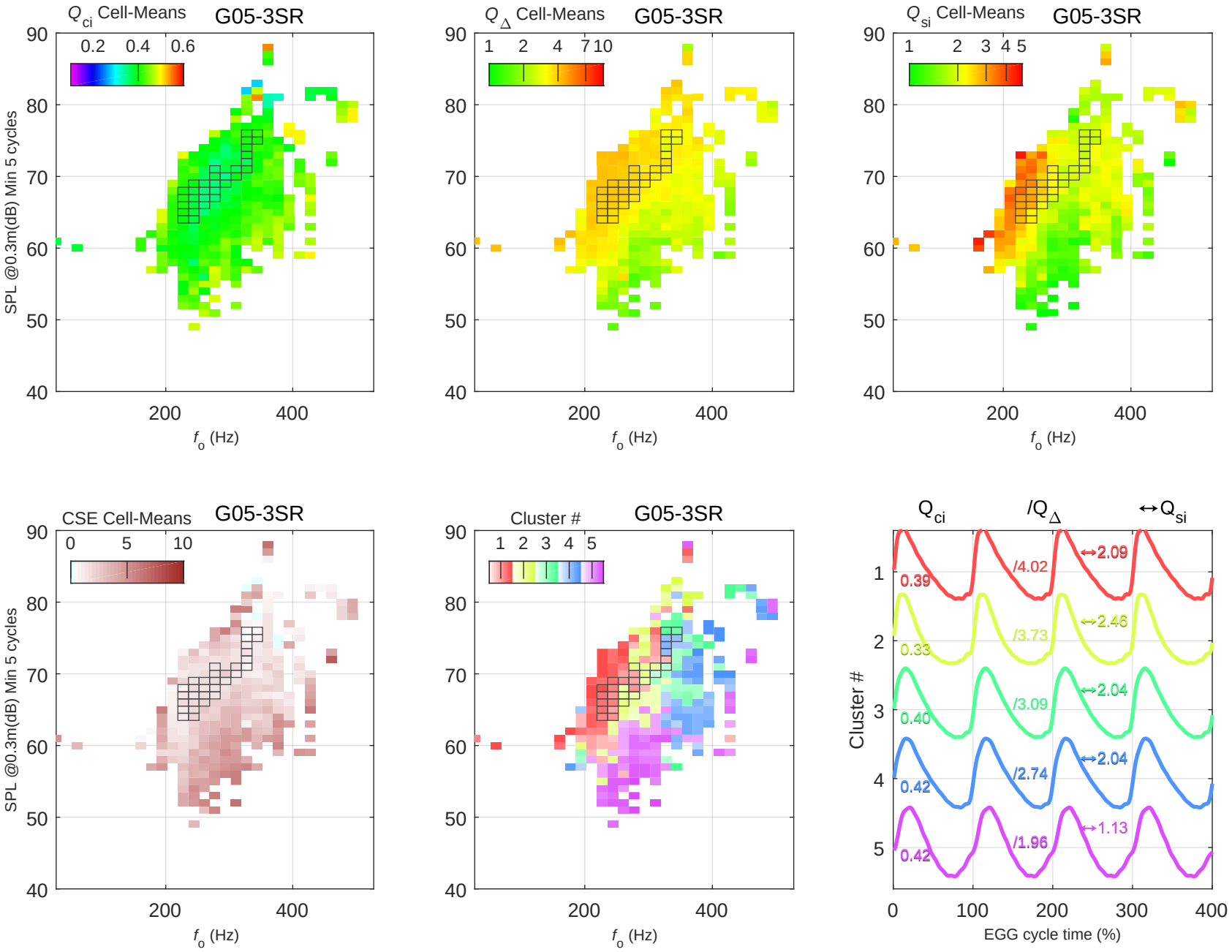

Q_{Δ} Cell-Means
G04-3SR
1 2 4 7 10
f_o (Hz)

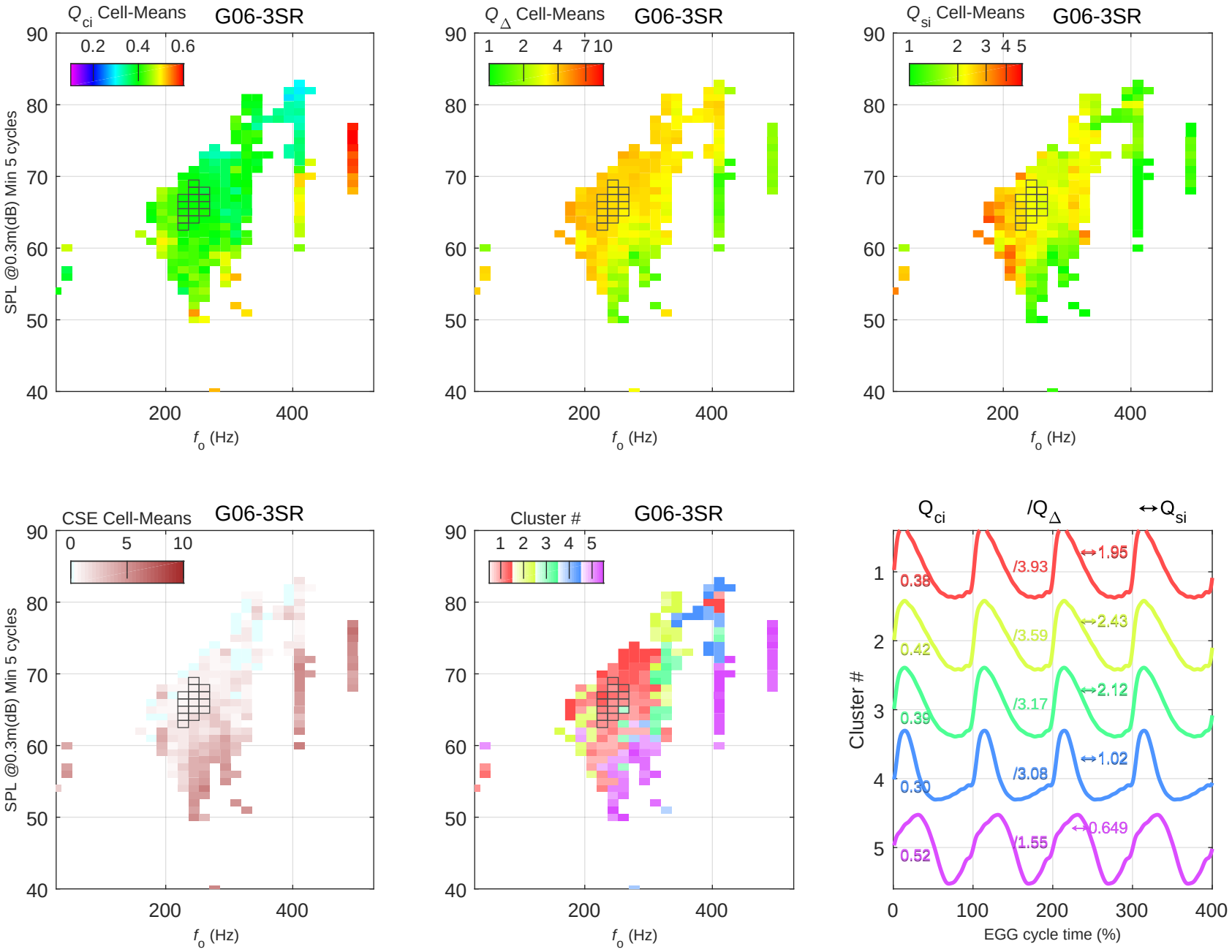

Q_{si} Cell-Means
G04-3SR
1 2 3 4 5
f_o (Hz)

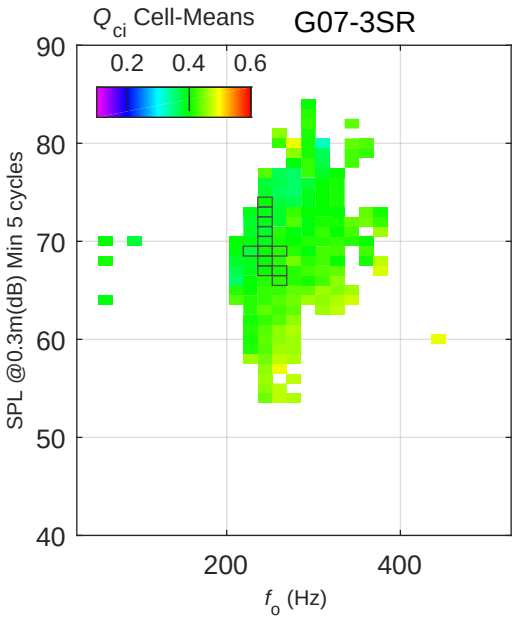

CSE Cell-Means
G04-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

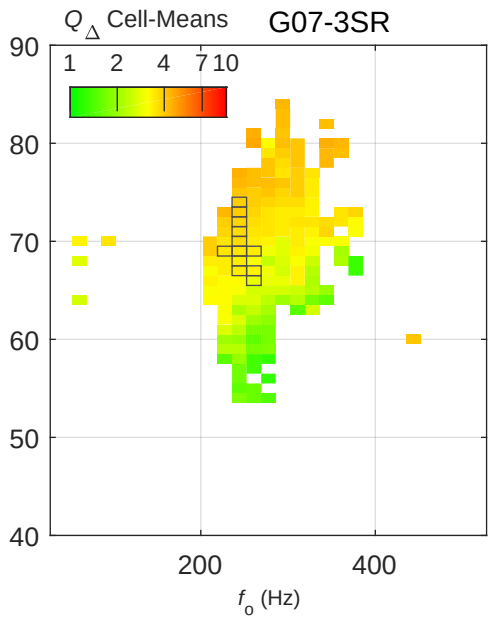

Cluster #
G04-3SR
1 2 3 4 5
f_o (Hz)

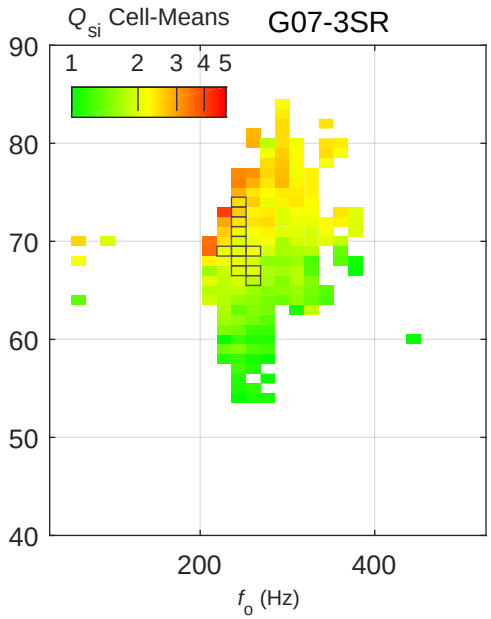

Q_{ci} /Q_{Δ} ↔Q_{si}
0.67 /4.19 ↔2.19
0.51 /4.21 ↔3.04
0.40 /4.44 ↔2.21
0.34 /3.92 ↔2.86
0.48 /2.42 ↔2.21
Cluster #
EGG cycle time (%)

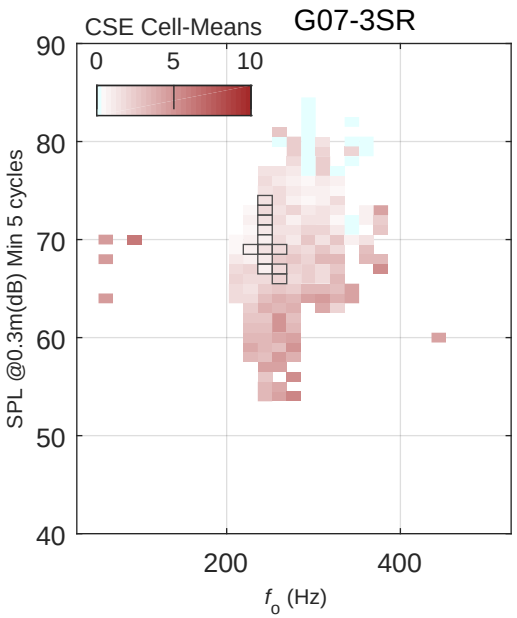

Qci Cell-Means
G05-3SR
0.2 0.4 0.6
QΔ Cell-Means
G05-3SR
1 2 4 7 10
Qsi Cell-Means
G05-3SR
1 2 3 4 5
CSE Cell-Means
G05-3SR
0 5 10
Cluster #
G05-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
0.39 /4.02 ↔2.09
0.33 /3.73 ↔2.46
0.40 /3.09 ↔2.04
0.42 /2.74 ↔2.04
0.42 /1.96 ↔1.13
Cluster #
EGG cycle time (%)

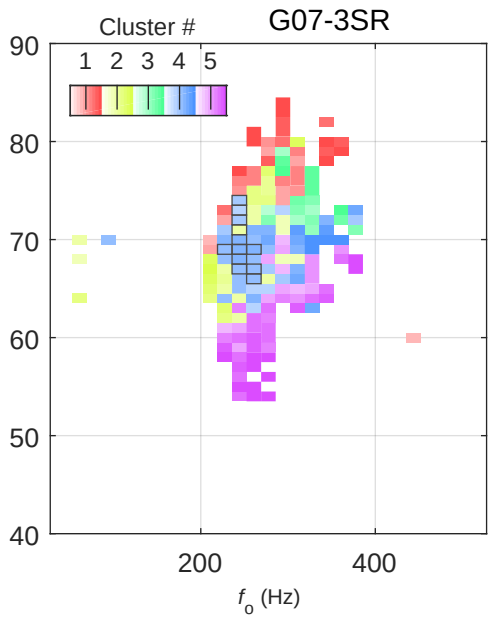

Qci Cell-Means
G06-3SR
0.2 0.4 0.6
QΔ Cell-Means
G06-3SR
1 2 4 7 10
Qsi Cell-Means
G06-3SR
1 2 3 4 5
CSE Cell-Means
G06-3SR
0 5 10
Cluster #
G06-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
/3.93 ↔1.95 0.38
/3.59 ↔2.43 0.42
/3.17 ↔2.12 0.39
/3.08 ↔1.02 0.30
/1.55 ↔0.649 0.52
Cluster #
EGG cycle time (%)

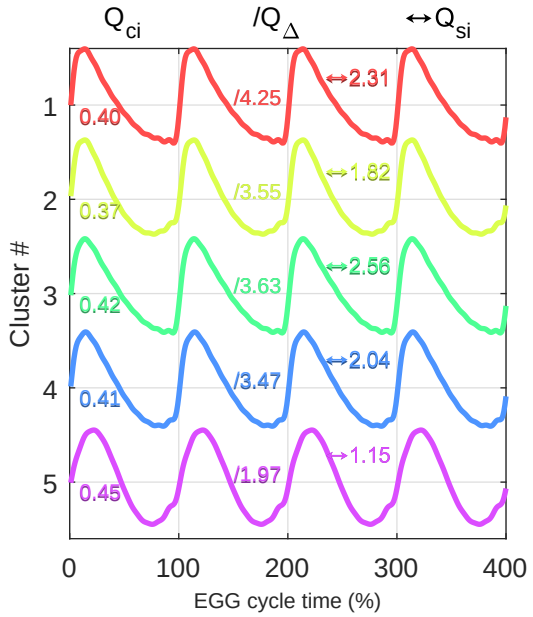

Q_{ci} Cell-Means
G07-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

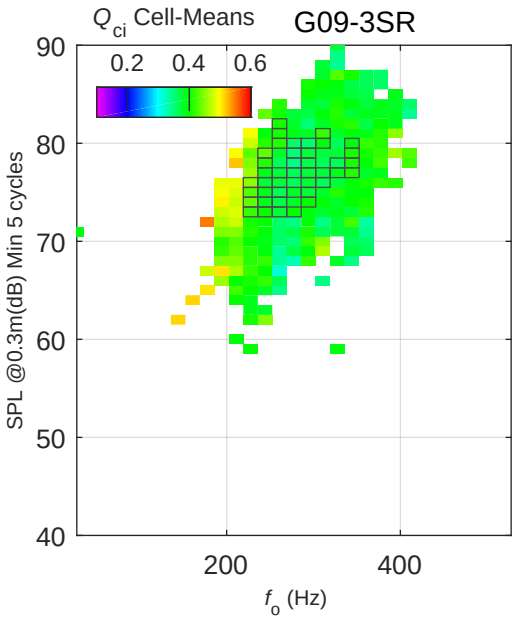

Q_{Δ} Cell-Means
G07-3SR
1 2 4 7 10
f_o (Hz)

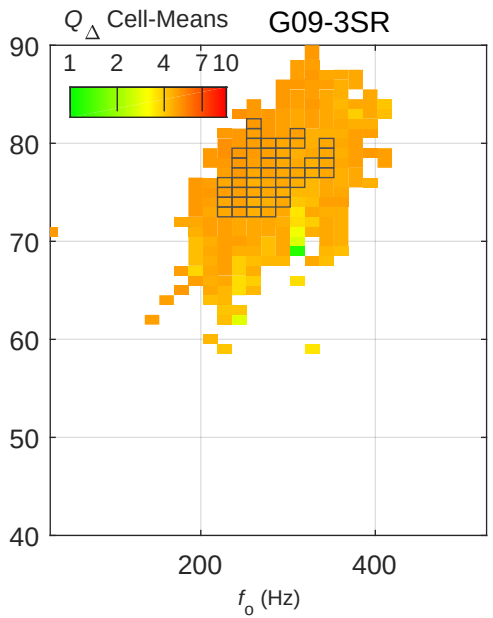

Q_{si} Cell-Means
G07-3SR
1 2 3 4 5
f_o (Hz)

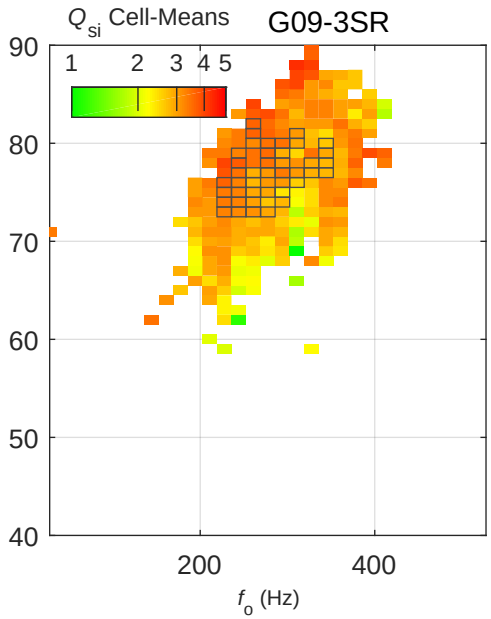

CSE Cell-Means
G07-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

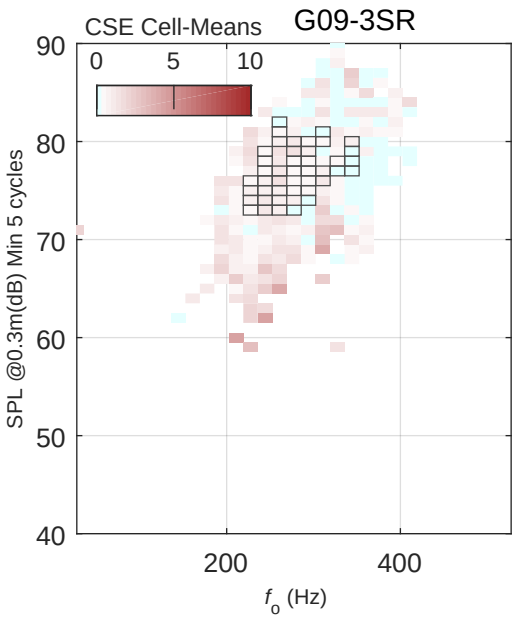

Cluster #
G07-3SR
1 2 3 4 5
f_o (Hz)

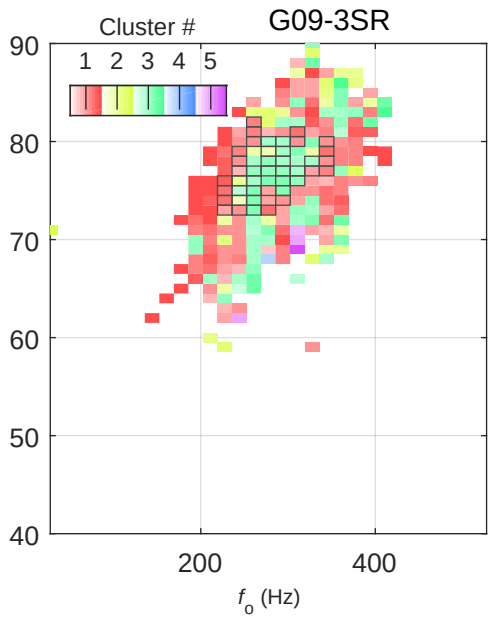

Q_{ci} /Q_{Δ} ↔Q_{si}
0.40 /4.25 ↔2.31
0.37 /3.55 ↔1.82
0.42 /3.63 ↔2.56
0.41 /3.47 ↔2.04
0.45 /1.97 ↔1.15
Cluster #
EGG cycle time (%)

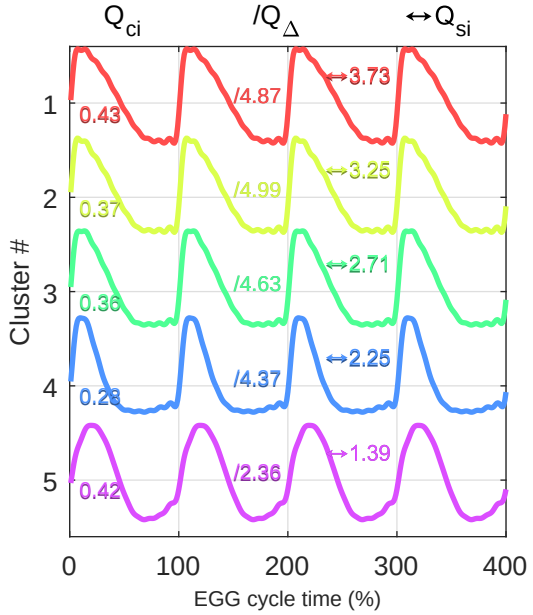

Q_{ci} Cell-Means
G09-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

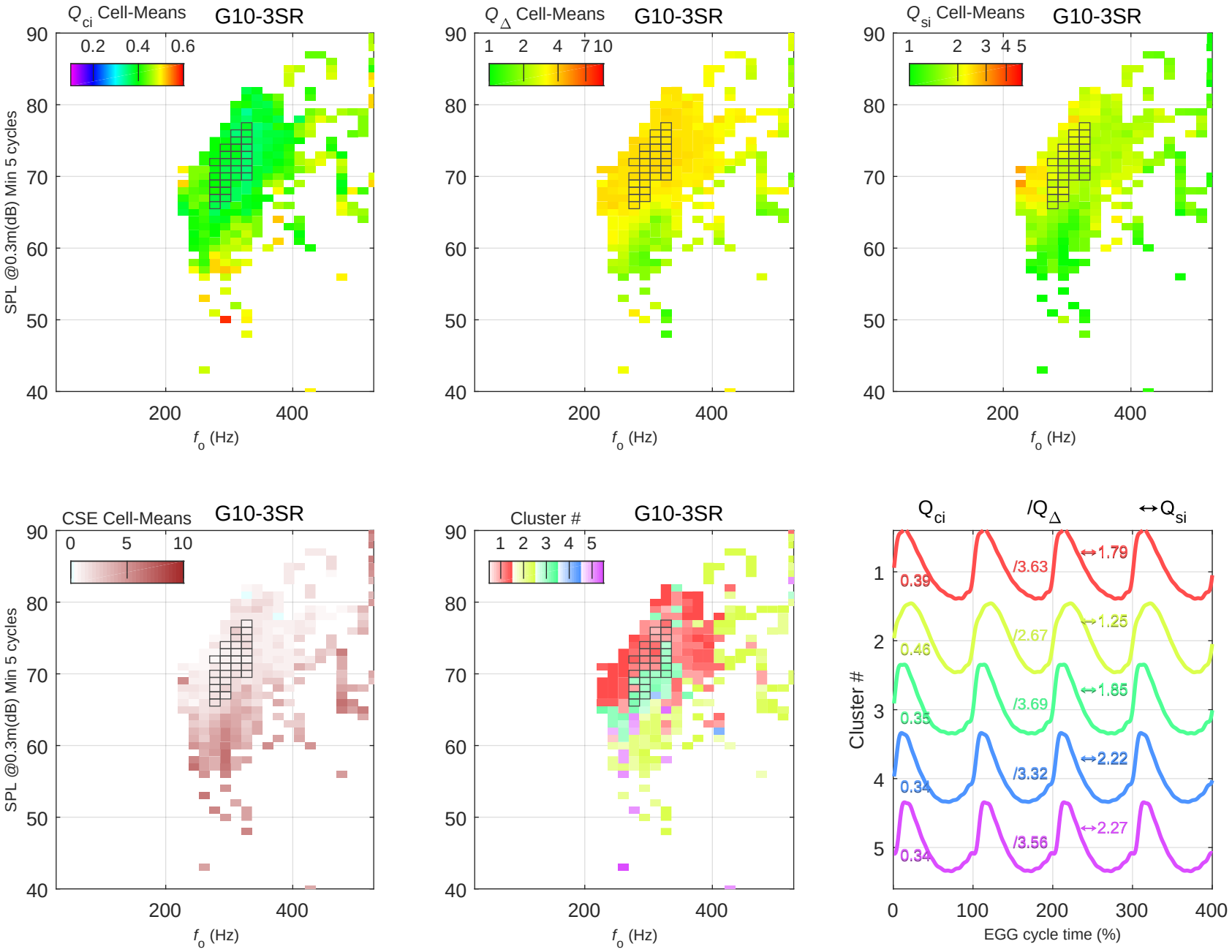

Q_Δ Cell-Means
G09-3SR
1 2 4 7 10
f_o (Hz)

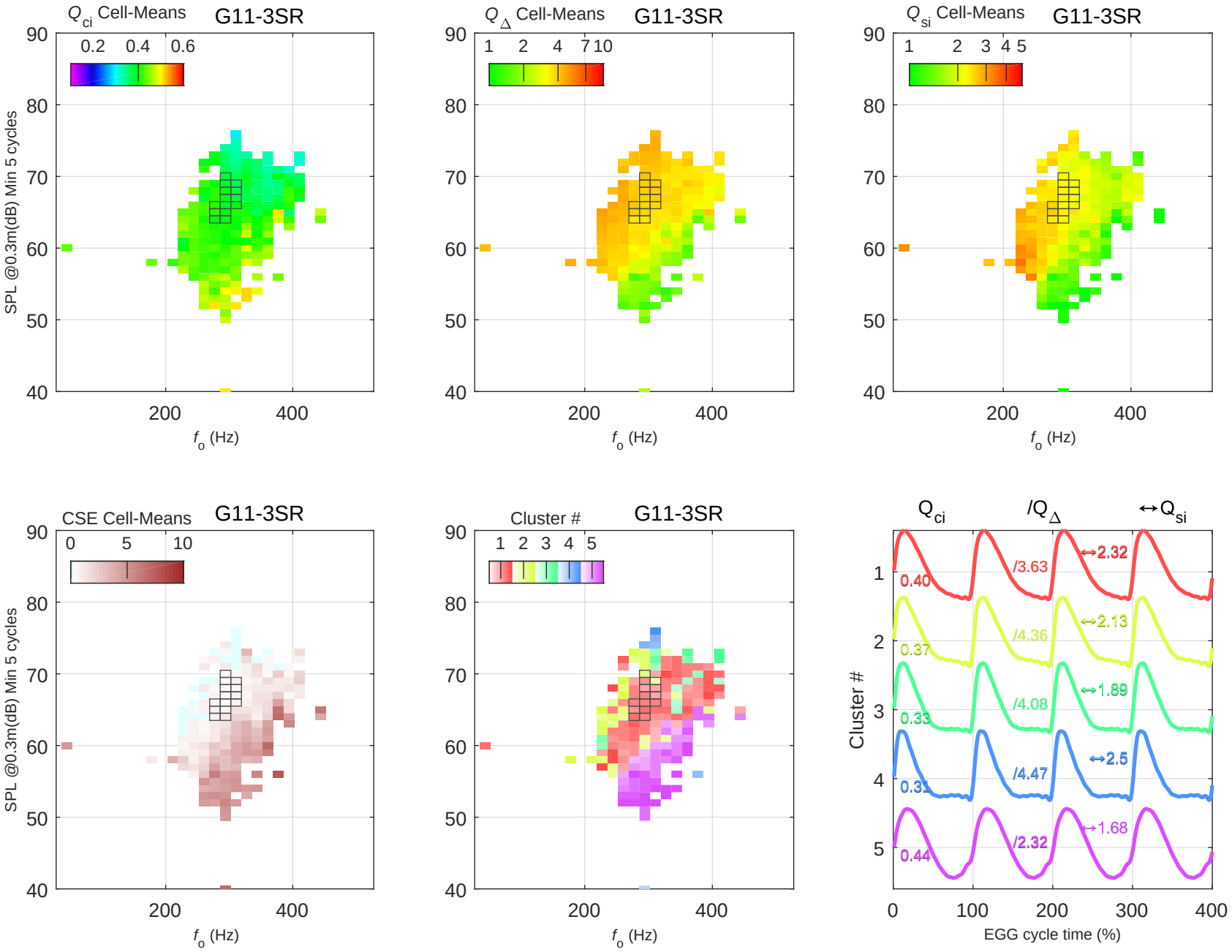

Q_{si} Cell-Means
G09-3SR
1 2 3 4 5
f_o (Hz)

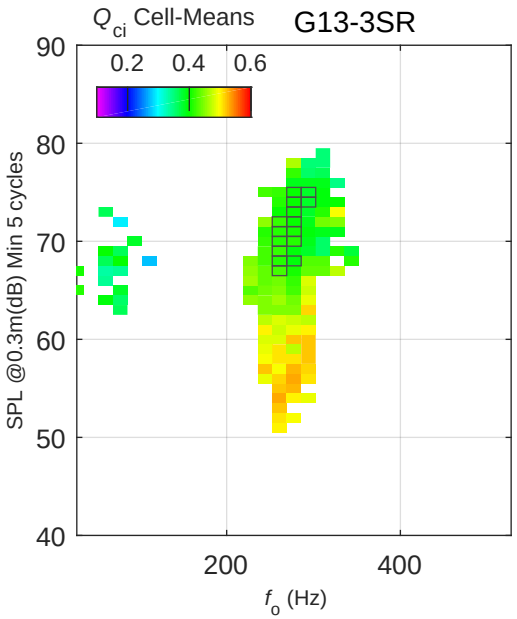

CSE Cell-Means
G09-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

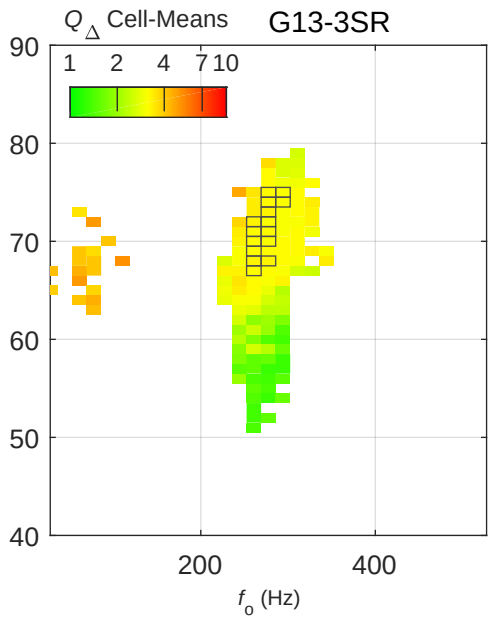

Cluster #
G09-3SR
1 2 3 4 5
f_o (Hz)

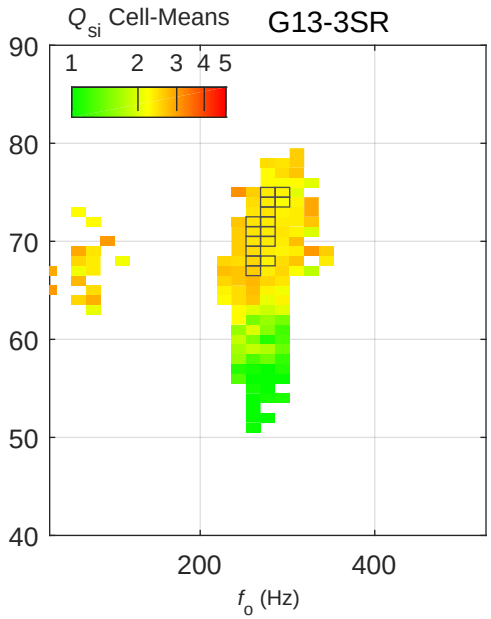

Q_{ci} /Q_Δ ↔Q_{si}
0.43
/4.87
↔3.73
0.37
/4.99
↔3.25
0.36
/4.63
↔2.71
0.28
/4.37
↔2.25
0.42
/2.36
↔1.39
Cluster #
EGG cycle time (%)

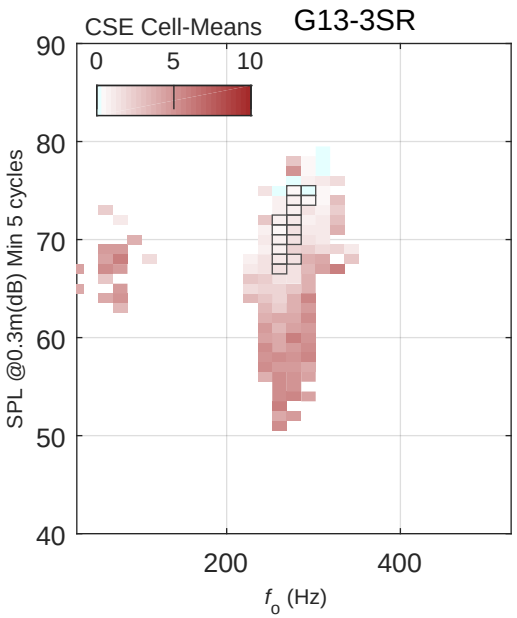

Qci Cell-Means
G10-3SR
0.2 0.4 0.6
QΔ Cell-Means
G10-3SR
1 2 4 7 10
Qsi Cell-Means
G10-3SR
1 2 3 4 5
CSE Cell-Means
G10-3SR
0 5 10
Cluster #
G10-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Qci /QΔ ↔Qsi
Cluster #
EGG cycle time (%)
0.39
/3.63
↔1.79
0.46
/2.67
↔1.25
0.35
/3.69
↔1.85
0.34
/3.32
↔2.22
0.34
/3.56
↔2.27

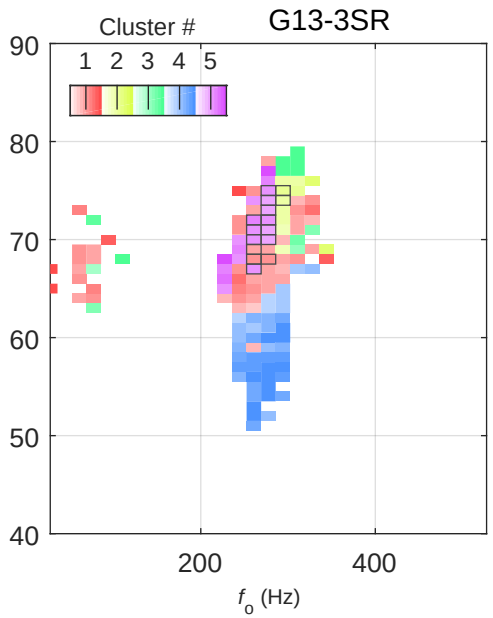

Qci Cell-Means
G11-3SR
0.2 0.4 0.6
Q Δ Cell-Means
G11-3SR
1 2 4 7 10
Qsi Cell-Means
G11-3SR
1 2 3 4 5
CSE Cell-Means
G11-3SR
0 5 10
Cluster #
G11-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f o (Hz)
Qci /Q Δ ↔Qsi
Cluster #
EGG cycle time (%)
0.40
/3.63
↔2.32
0.37
/4.36
↔2.13
0.33
/4.08
↔1.89
0.31
/4.47
↔2.5
0.44
/2.32
↔1.68

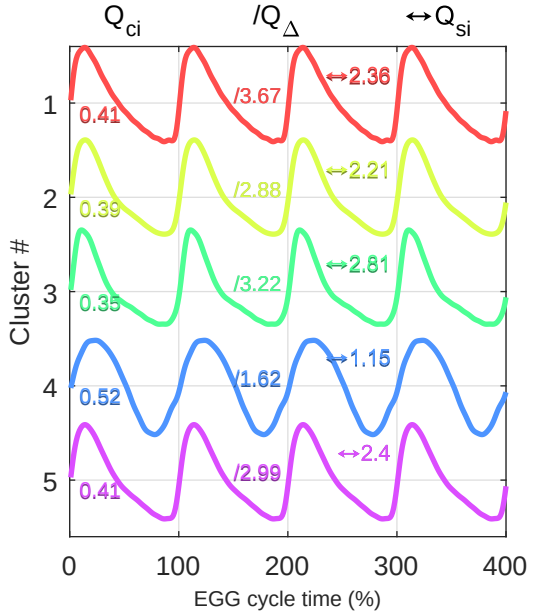

Qci Cell-Means
G13-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

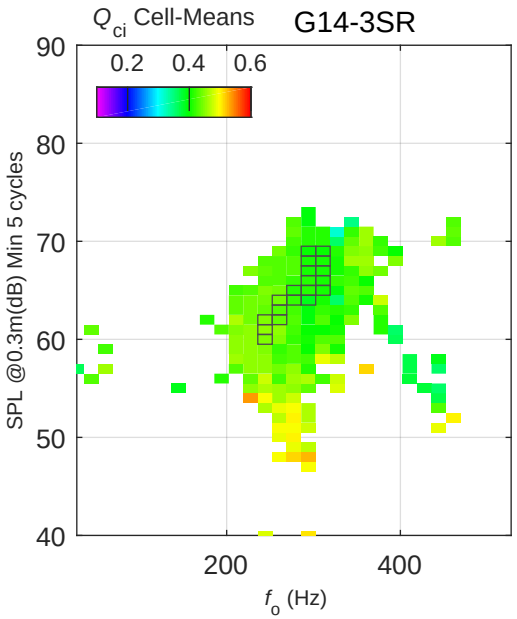

Q Δ Cell-Means
G13-3SR
1 2 4 7 10
fo (Hz)

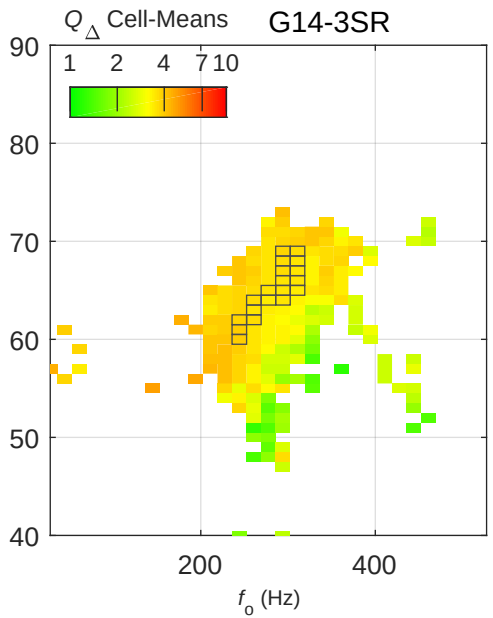

Qsi Cell-Means
G13-3SR
1 2 3 4 5
fo (Hz)

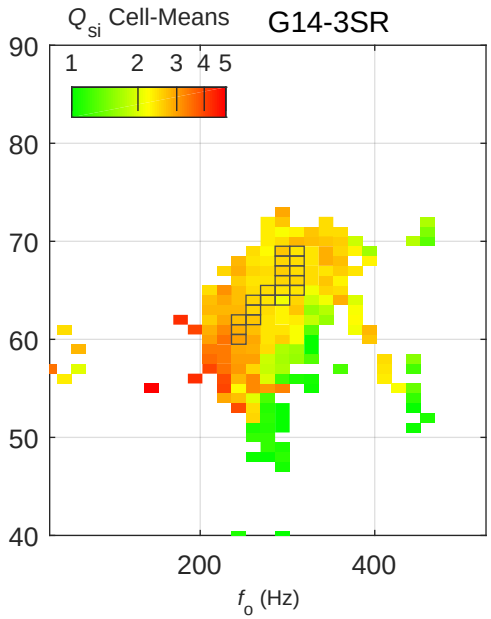

CSE Cell-Means
G13-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

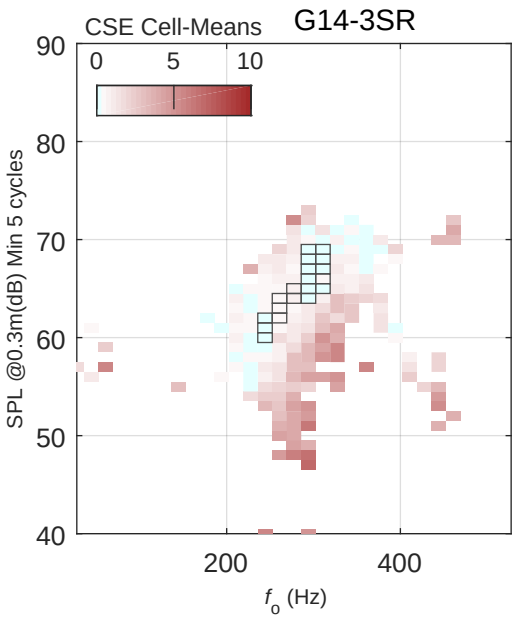

Cluster #
G13-3SR
1 2 3 4 5
fo (Hz)

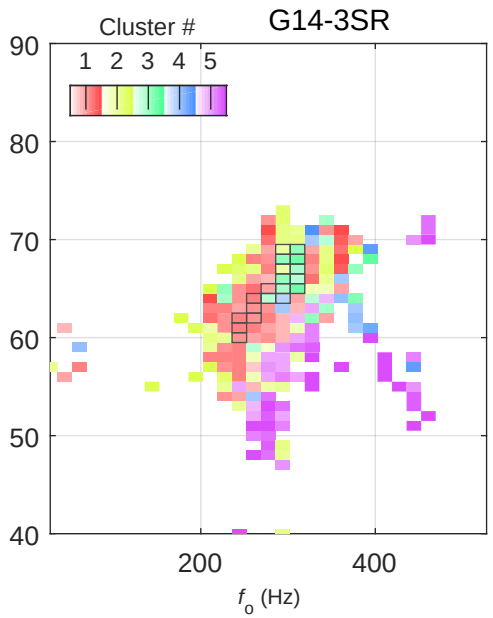

Qci /Q Δ ↔Qsi
0.41
/3.67
↔2.36
0.39
/2.88
↔2.21
0.35
/3.22
↔2.81
0.52
/1.62
↔1.15
0.41
/2.99
↔2.4
Cluster #
EGG cycle time (%)

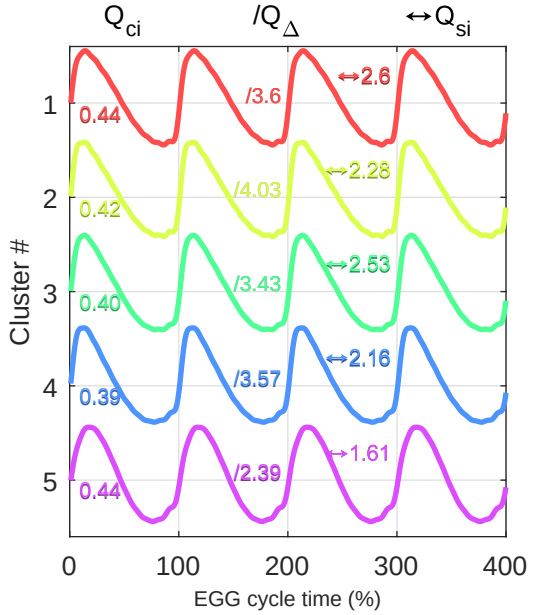

Q_{ci} Cell-Means
G14-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

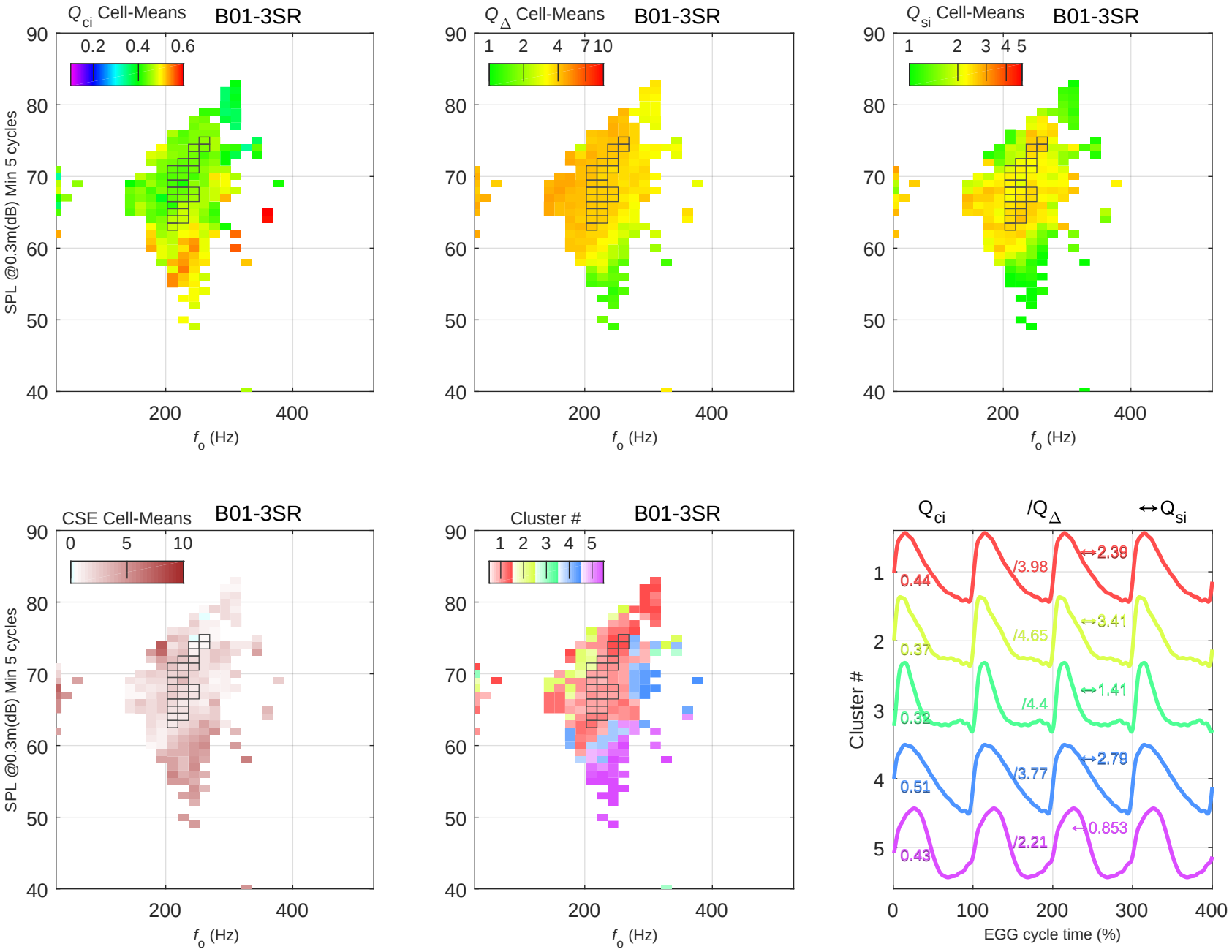

Q_{Δ} Cell-Means
G14-3SR
1 2 4 7 10
f_o (Hz)

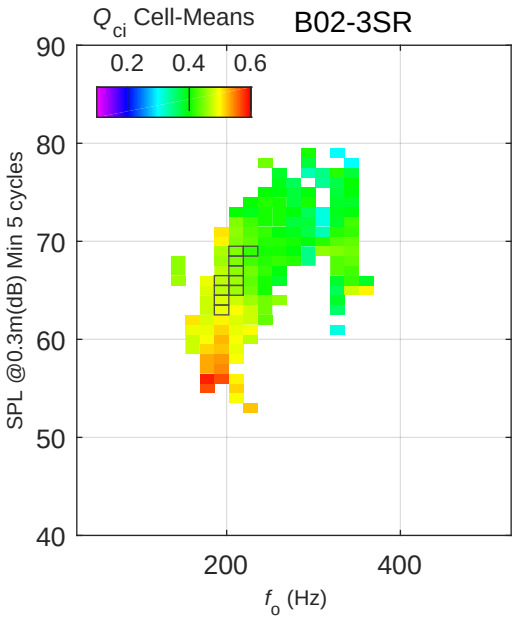

Q_{si} Cell-Means
G14-3SR
1 2 3 4 5
f_o (Hz)

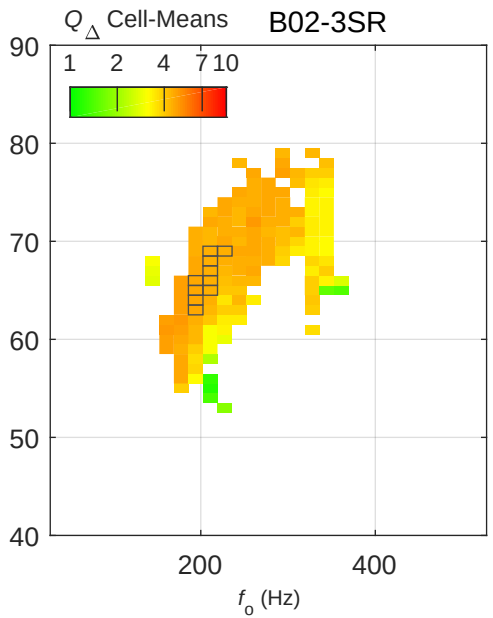

CSE Cell-Means
G14-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

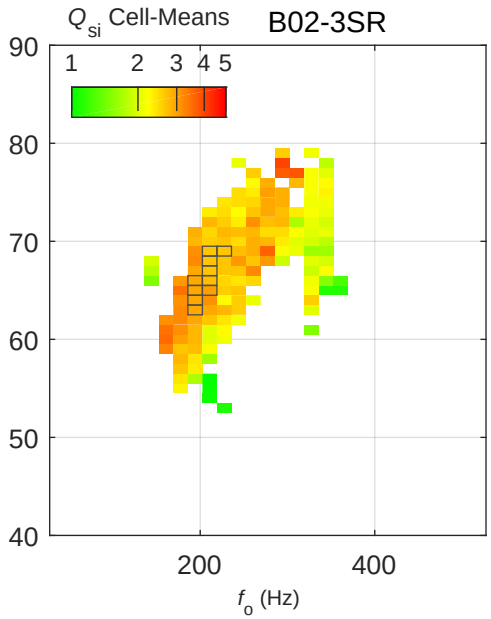

Cluster #
G14-3SR
1 2 3 4 5
f_o (Hz)

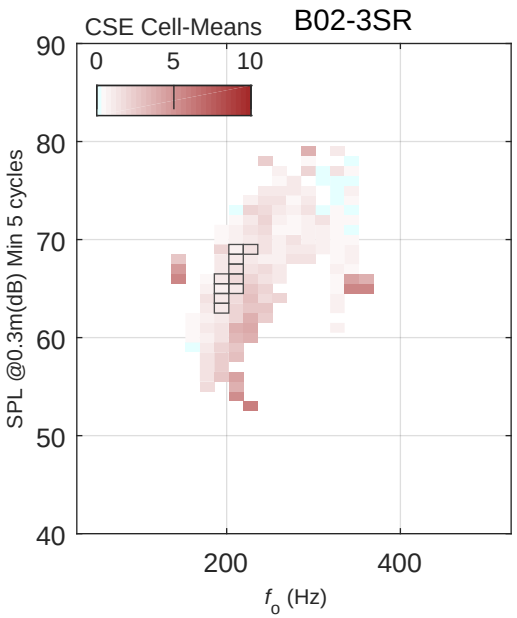

Q_{ci} /Q_{Δ} ↔Q_{si}
0.44 /3.6 ↔2.6
0.42 /4.03 ↔2.28
0.40 /3.43 ↔2.53
0.39 /3.57 ↔2.16
0.44 /2.39 ↔1.61
Cluster #
EGG cycle time (%)

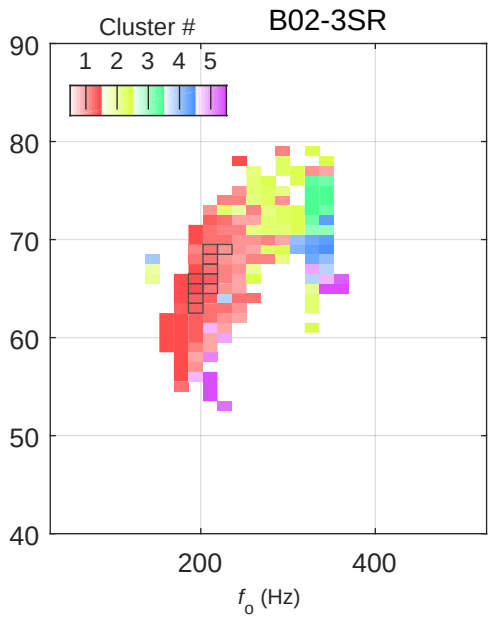

Q_{ci} Cell-Means
B01-3SR
0.2 0.4 0.6
Q_{Δ} Cell-Means
B01-3SR
1 2 4 7 10
Q_{si} Cell-Means
B01-3SR
1 2 3 4 5
CSE Cell-Means
B01-3SR
0 5 10
Cluster #
B01-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)
Q_{ci} /Q_{Δ} ↔Q_{si}
Cluster #
0.44 /3.98 ↔2.39
0.37 /4.65 ↔3.41
0.32 /4.4 ↔1.41
0.51 /3.77 ↔2.79
0.43 /2.21 ↔0.853
EGG cycle time (%)

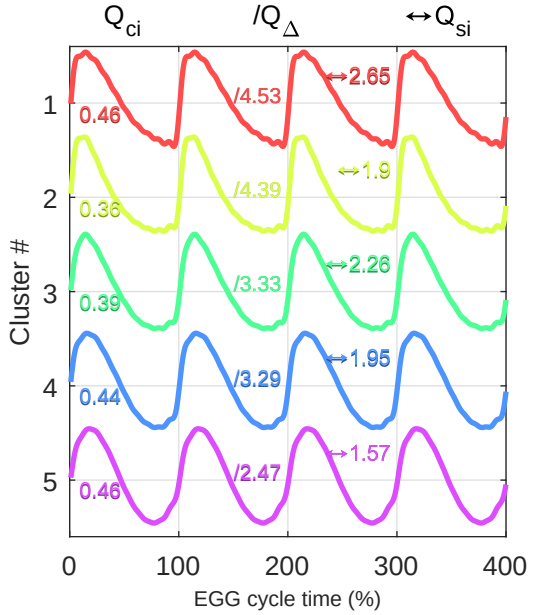

Qci Cell-Means
B02-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

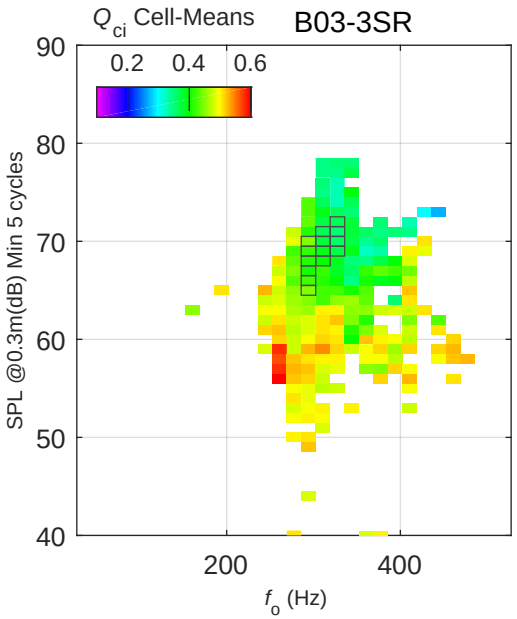

Q Δ Cell-Means
B02-3SR
1 2 4 7 10
fo (Hz)

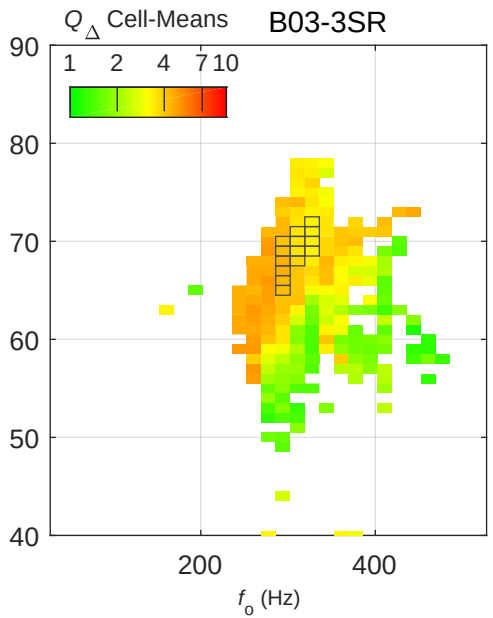

Qsi Cell-Means
B02-3SR
1 2 3 4 5
fo (Hz)

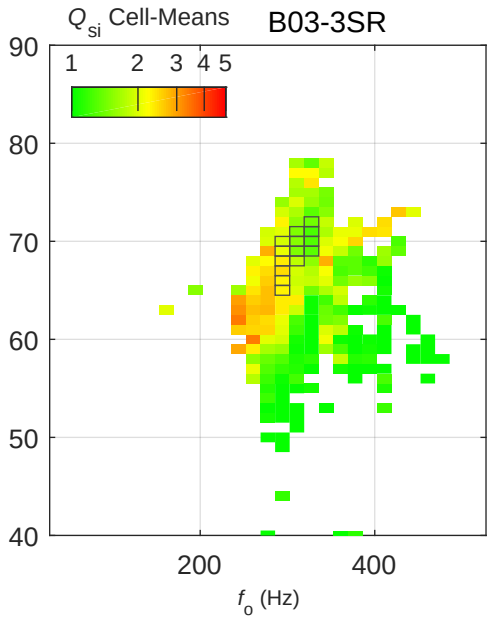

CSE Cell-Means
B02-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

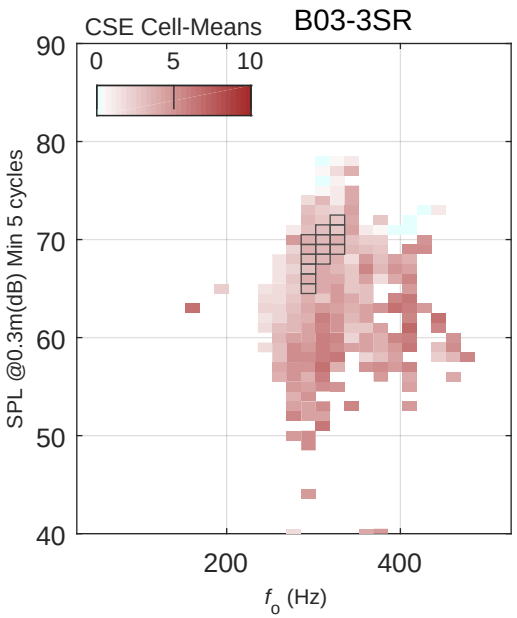

Cluster #
B02-3SR
1 2 3 4 5
fo (Hz)

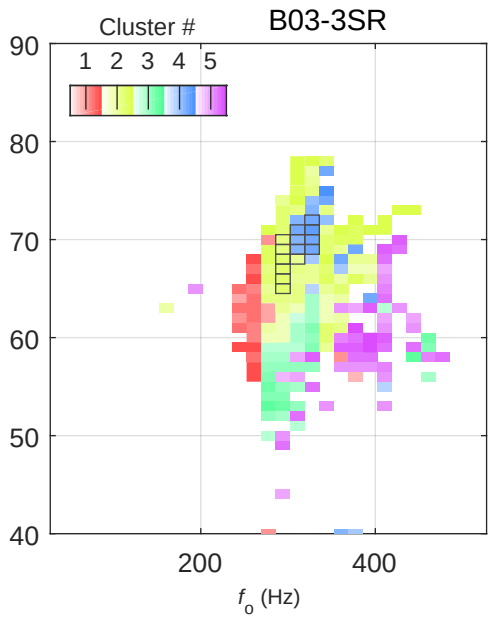

Qci /Q Δ ↔Qsi
0.46
/4.53
↔2.65
0.36
/4.39
↔1.9
0.39
/3.33
↔2.26
0.44
/3.29
↔1.95
0.46
/2.47
↔1.57
Cluster #
EGG cycle time (%)

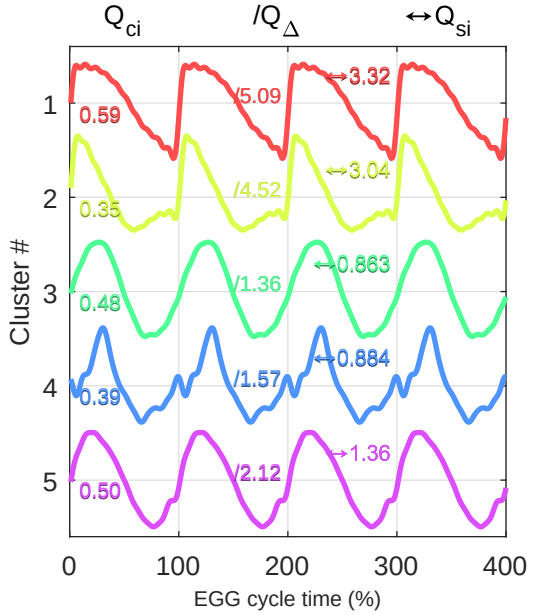

Qci Cell-Means
B03-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

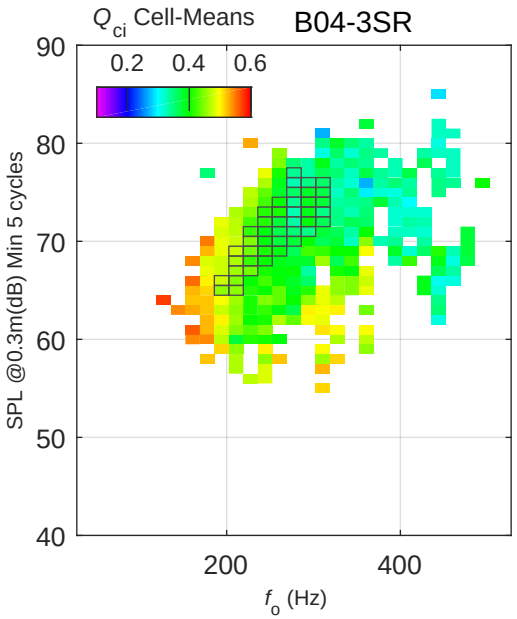

Q Δ Cell-Means
B03-3SR
1 2 4 7 10
fo (Hz)

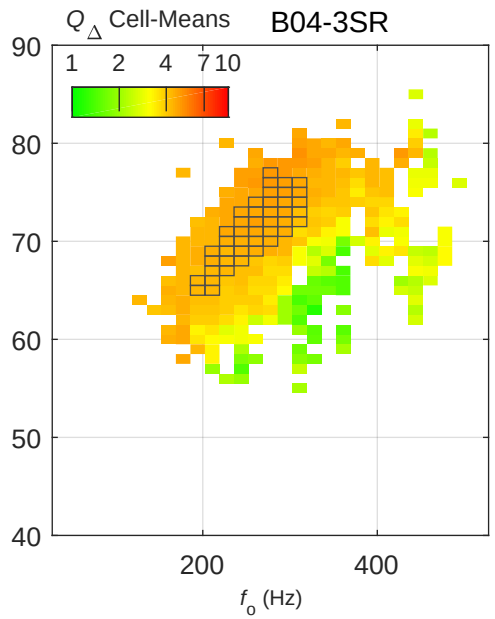

Qsi Cell-Means
B03-3SR
1 2 3 4 5
fo (Hz)

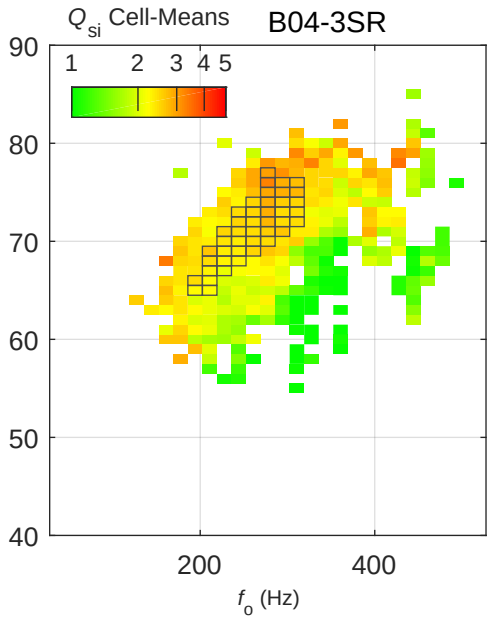

CSE Cell-Means
B03-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

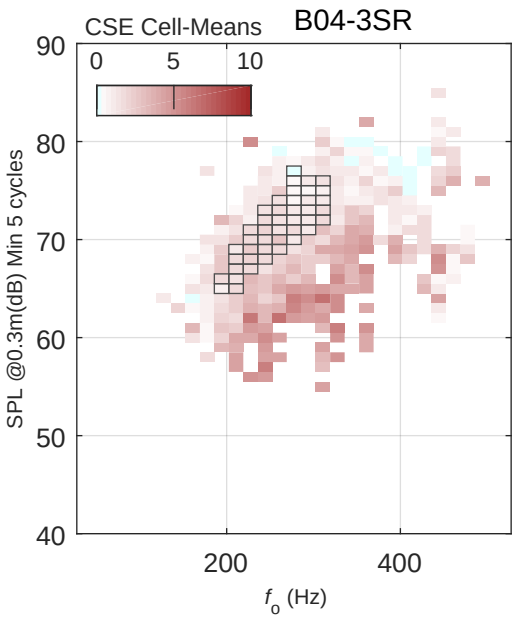

Cluster #
B03-3SR
1 2 3 4 5
fo (Hz)

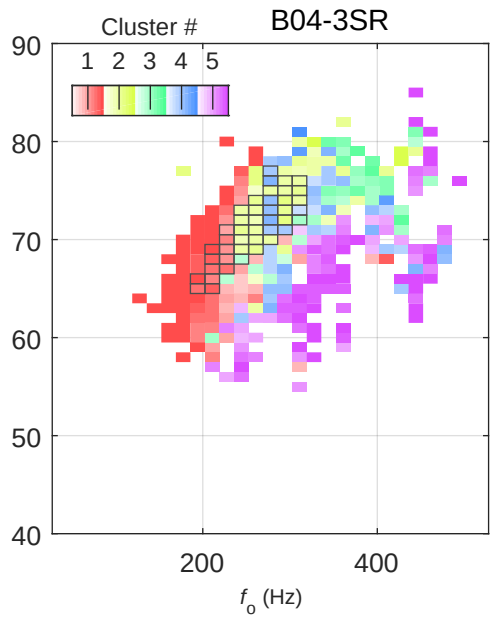

Qci /QΔ ↔Qsi
0.59
/5.09
↔3.32
0.35
/4.52
↔3.04
0.48
/1.36
↔0.863
0.39
/1.57
↔0.884
0.50
/2.12
↔1.36
Cluster #
EGG cycle time (%)

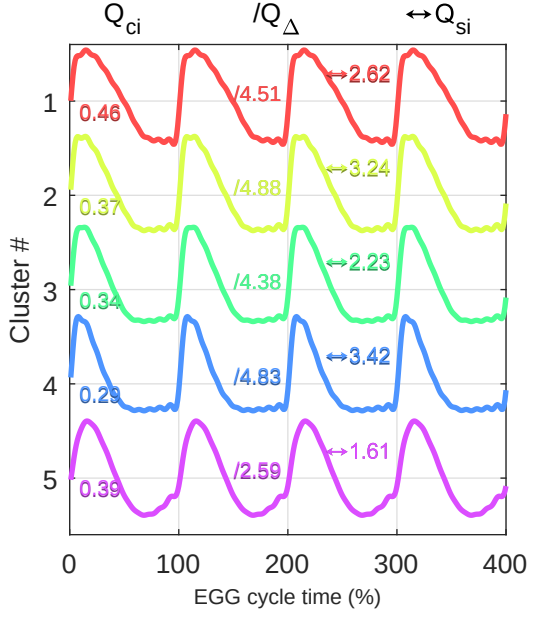

Q_{ci} Cell-Means
B04-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

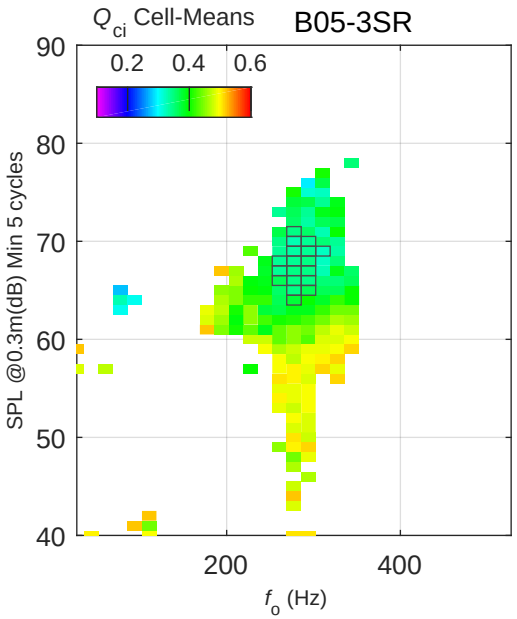

Q_{Δ} Cell-Means
B04-3SR
1 2 4 7 10
f_o (Hz)

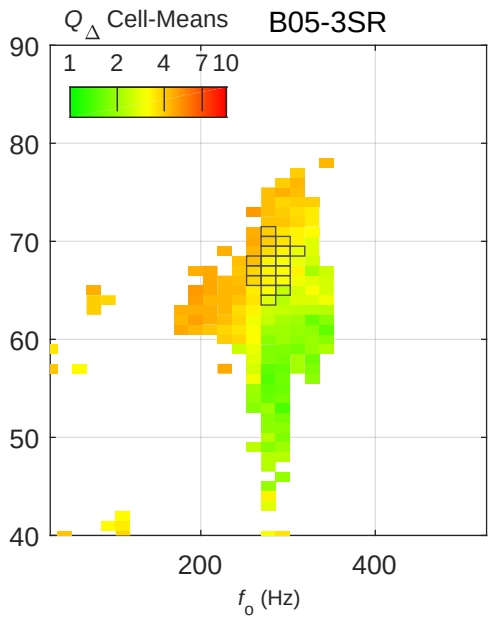

Q_{si} Cell-Means
B04-3SR
1 2 3 4 5
f_o (Hz)

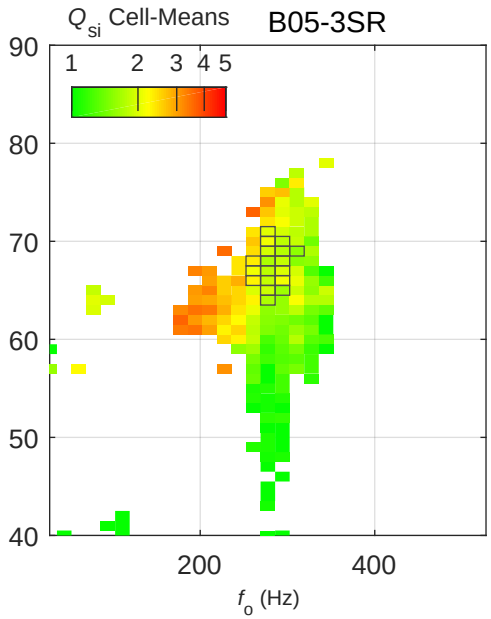

CSE Cell-Means
B04-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

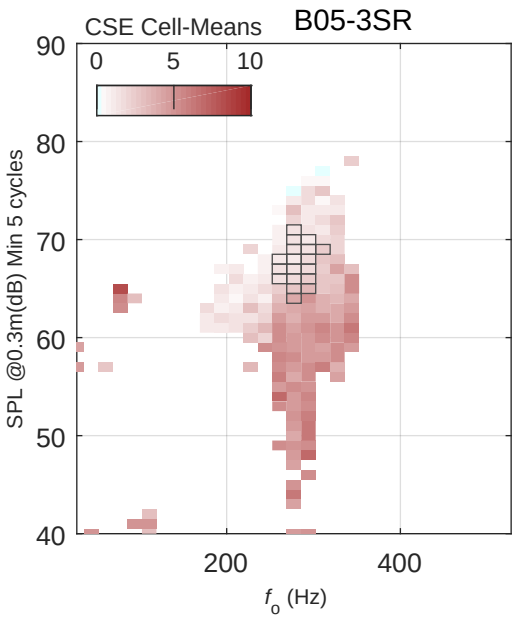

Cluster #
B04-3SR
1 2 3 4 5
f_o (Hz)

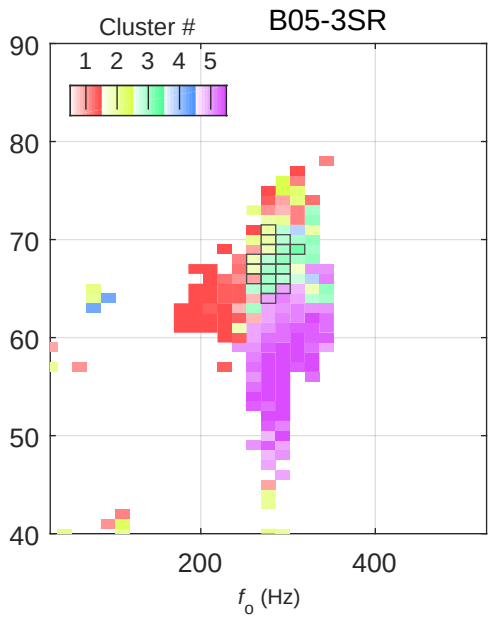

Q_{ci} /Q_{Δ} ↔Q_{si}
0.46 /4.51 ↔2.62
0.37 /4.88 ↔3.24
0.34 /4.38 ↔2.23
0.29 /4.83 ↔3.42
0.39 /2.59 ↔1.61
Cluster #
EGG cycle time (%)

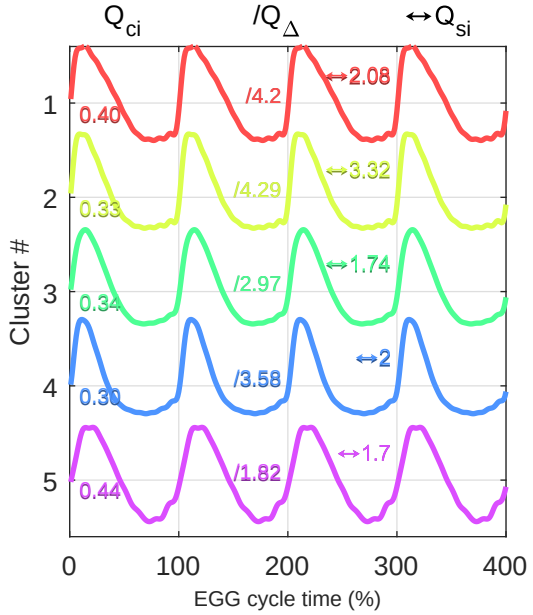

Qci Cell-Means
B05-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

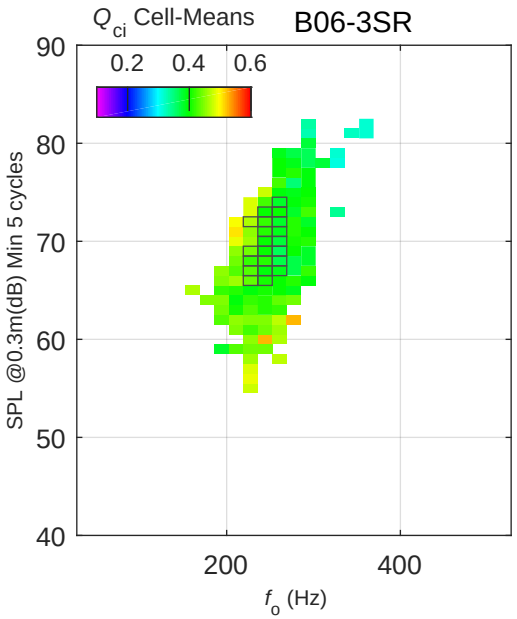

Q Δ Cell-Means
B05-3SR
1 2 4 7 10
fo (Hz)

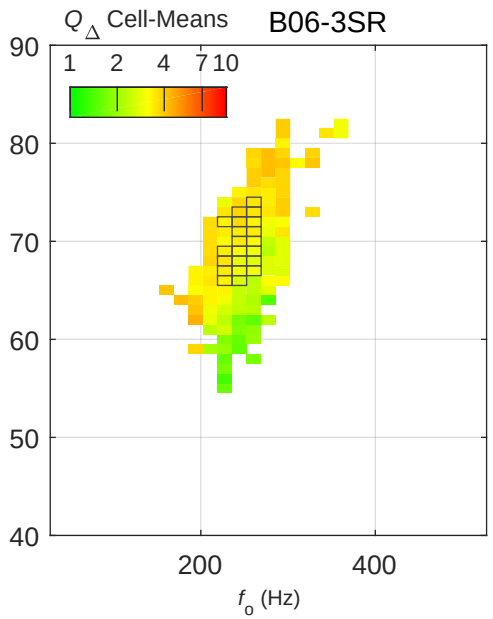

Qsi Cell-Means
B05-3SR
1 2 3 4 5
fo (Hz)

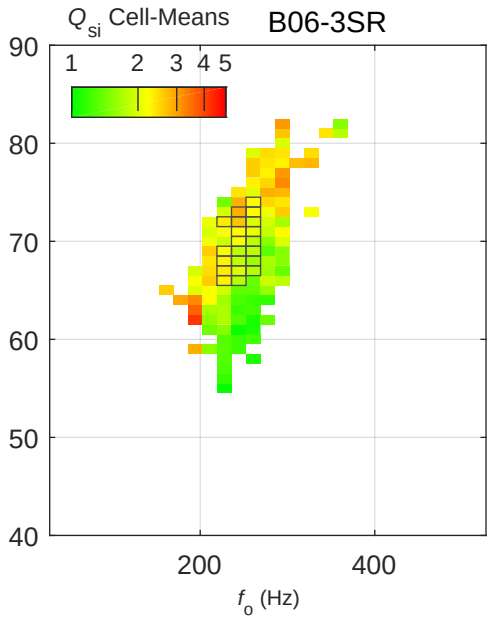

CSE Cell-Means
B05-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

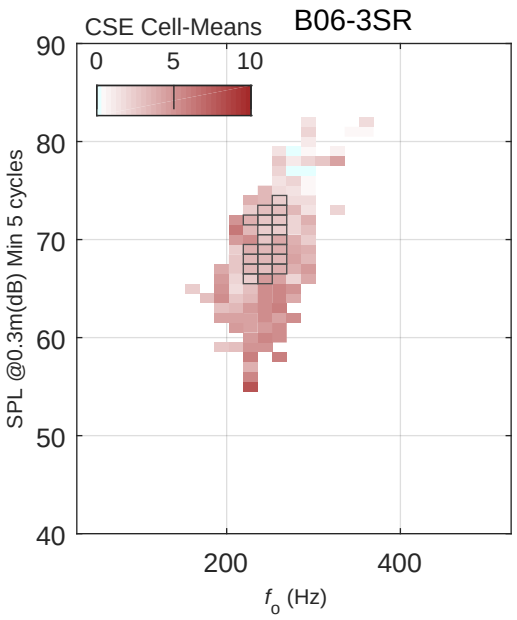

Cluster #
B05-3SR
1 2 3 4 5
fo (Hz)

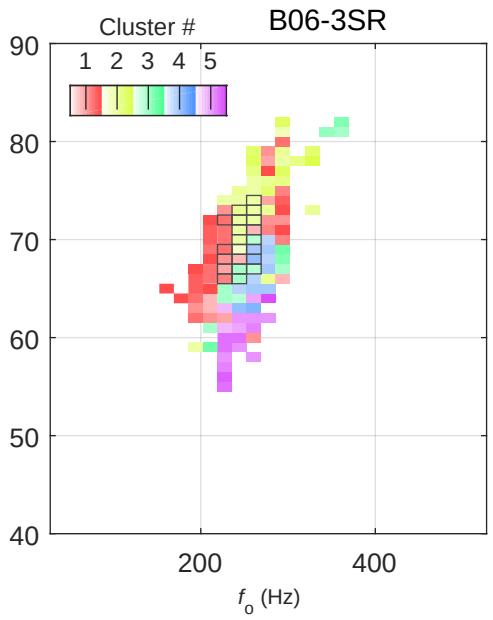

Qci
/Q Δ
↔Qsi
0.40
/4.2
↔2.08
0.33
/4.29
↔3.32
0.34
/2.97
↔1.74
0.30
/3.58
↔2
0.44
/1.82
↔1.7
Cluster #
EGG cycle time (%)

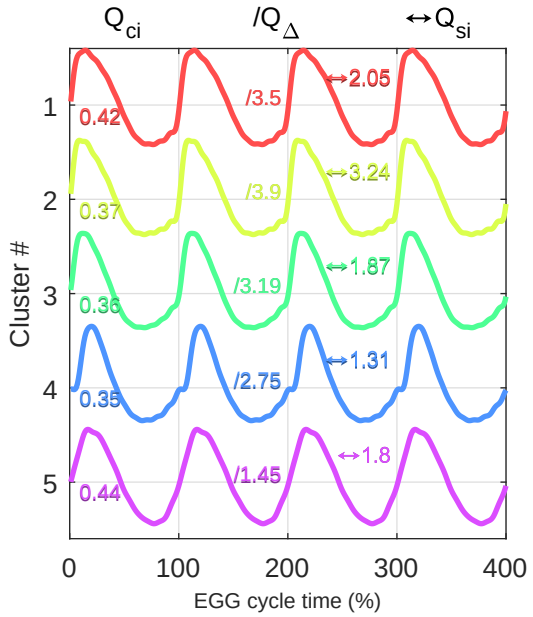

Q_{ci} Cell-Means
B06-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

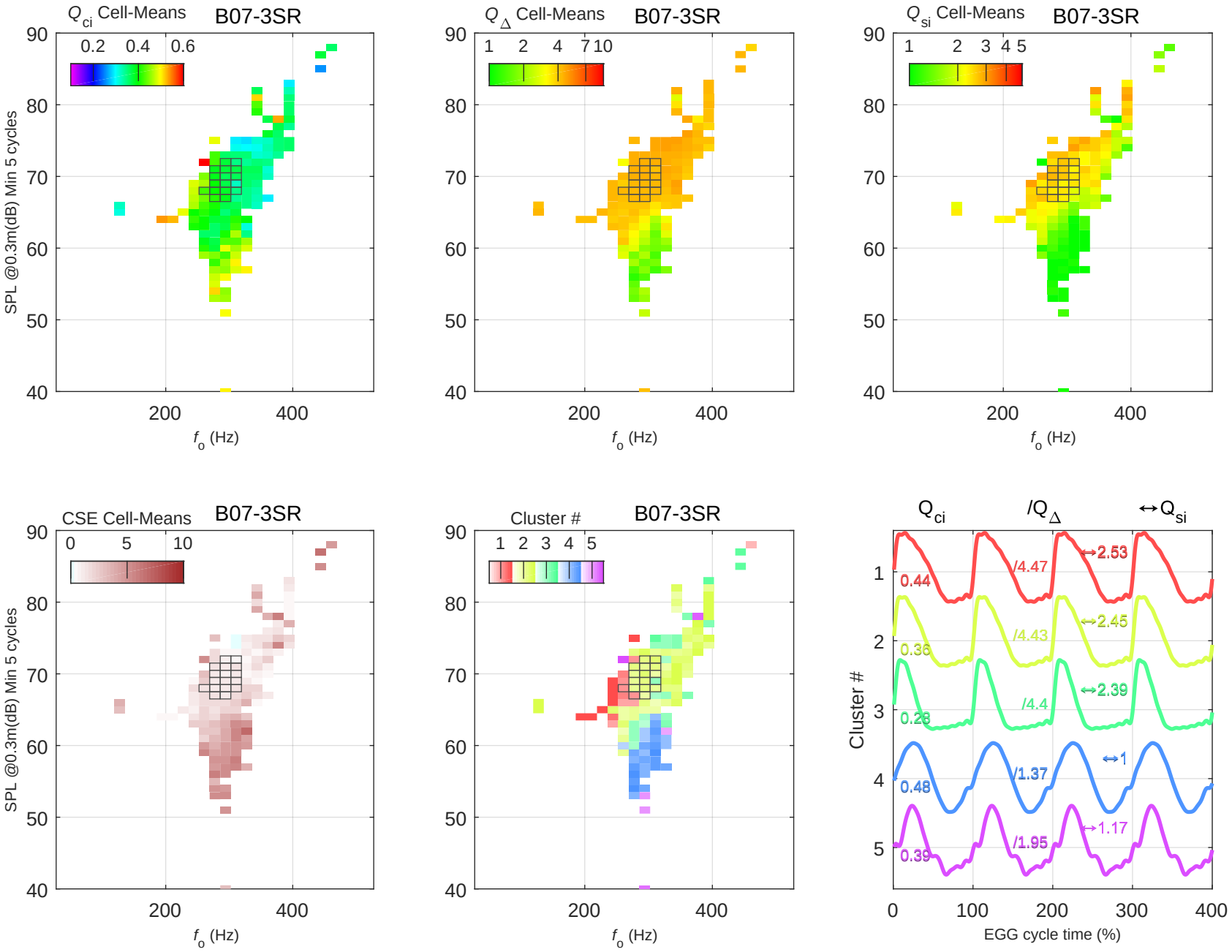

Q_{Δ} Cell-Means
B06-3SR
1 2 4 7 10
f_o (Hz)

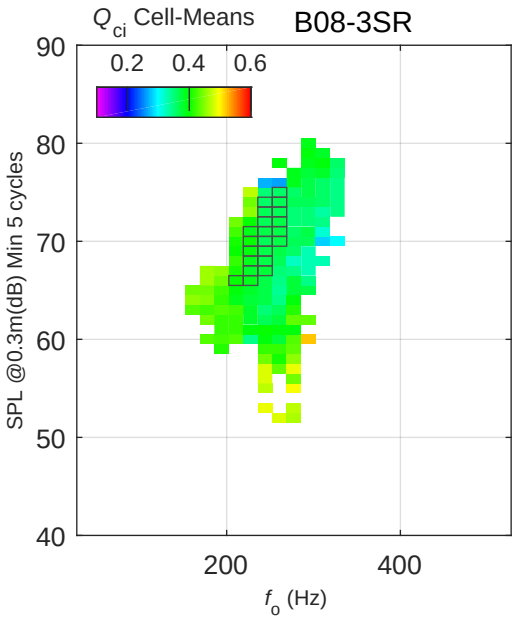

Q_{si} Cell-Means
B06-3SR
1 2 3 4 5
f_o (Hz)

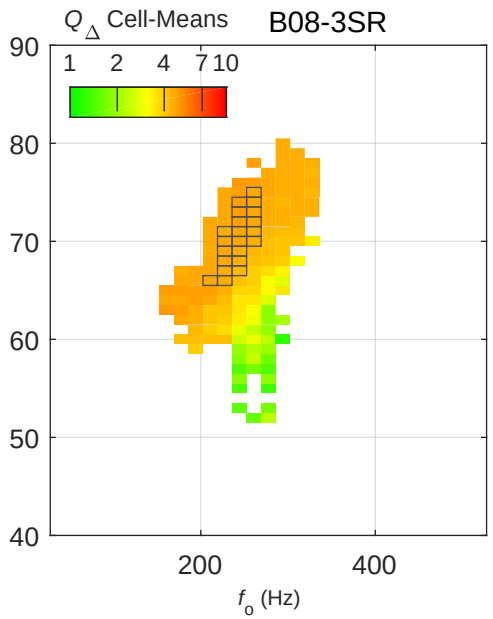

CSE Cell-Means
B06-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)

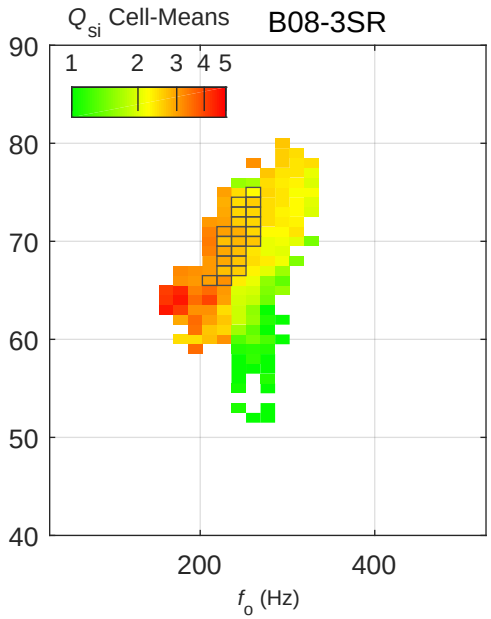

Cluster #
B06-3SR
1 2 3 4 5
f_o (Hz)

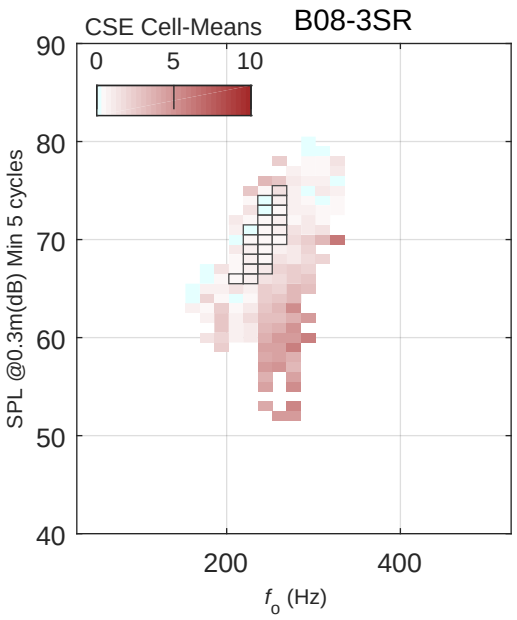

Q_{ci} /Q_{Δ} ↔Q_{si}
0.42 /3.5 ↔2.05
0.37 /3.9 ↔3.24
0.36 /3.19 ↔1.87
0.35 /2.75 ↔1.31
0.44 /1.45 ↔1.8
Cluster #
EGG cycle time (%)

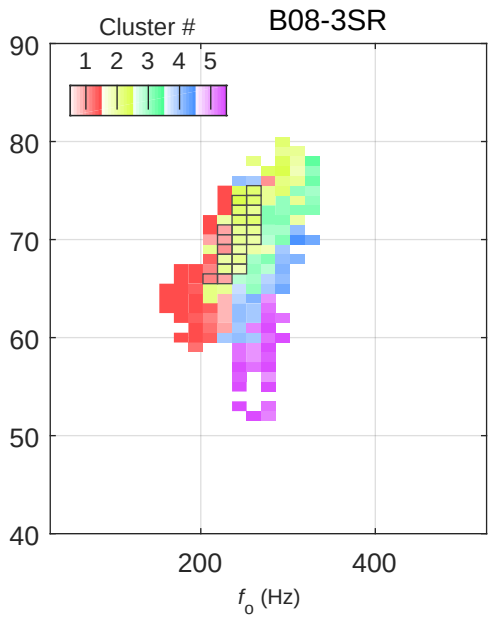

Qci Cell-Means
B07-3SR
0.2 0.4 0.6
QΔ Cell-Means
B07-3SR
1 2 4 7 10
Qsi Cell-Means
B07-3SR
1 2 3 4 5
CSE Cell-Means
B07-3SR
0 5 10
Cluster #
B07-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
fo (Hz)
Cluster #
EGG cycle time (%)
Qci /QΔ ↔Qsi
0.44
/4.47
↔2.53
0.36
/4.43
↔2.45
0.28
/4.4
↔2.39
0.48
/1.37
↔1
0.39
/1.95
↔1.17

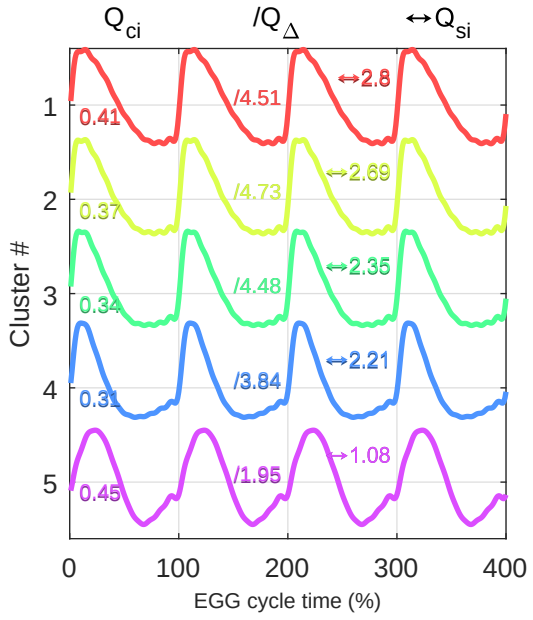

Qci Cell-Means
B08-3SR
0.2 0.4 0.6
SPL @0.3m(dB) Min 5 cycles
fo (Hz)

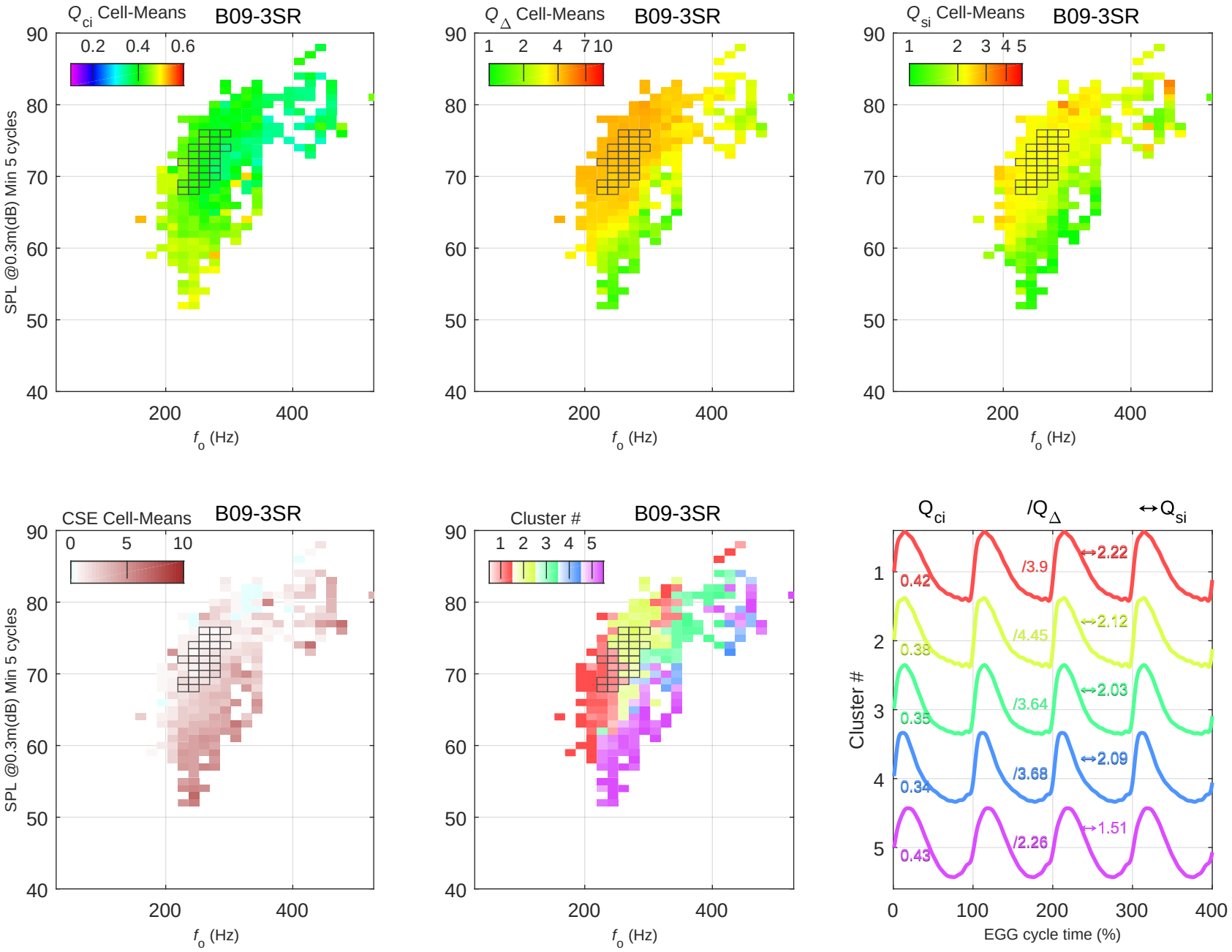

Q Δ Cell-Means
B08-3SR
1 2 4 7 10
fo (Hz)


Qsi Cell-Means
B08-3SR
1 2 3 4 5
fo (Hz)


CSE Cell-Means
B08-3SR
0 5 10
SPL @0.3m(dB) Min 5 cycles
fo (Hz)


Cluster #
B08-3SR
1 2 3 4 5
fo (Hz)


Qci /QΔ ↔Qsi
0.41 /4.51 ↔2.8
0.37 /4.73 ↔2.69
0.34 /4.48 ↔2.35
0.31 /3.84 ↔2.21
0.45 /1.95 ↔1.08
Cluster #
EGG cycle time (%)


Q_{ci} Cell-Means
B09-3SR
0.2 0.4 0.6
Q_{Δ} Cell-Means
B09-3SR
1 2 4 7 10
Q_{si} Cell-Means
B09-3SR
1 2 3 4 5
CSE Cell-Means
B09-3SR
0 5 10
Cluster #
B09-3SR
1 2 3 4 5
SPL @0.3m(dB) Min 5 cycles
f_o (Hz)
Q_{ci} /Q_{Δ} ↔Q_{si}
0.42 /3.9 ↔2.22
0.38 /4.45 ↔2.12
0.35 /3.64 ↔2.03
0.34 /3.68 ↔2.09
0.43 /2.26 ↔1.51
Cluster #
EGG cycle time (%)