WAVi EEG

Signal Coherence Networks

Background - Electroencephalography (EEG)

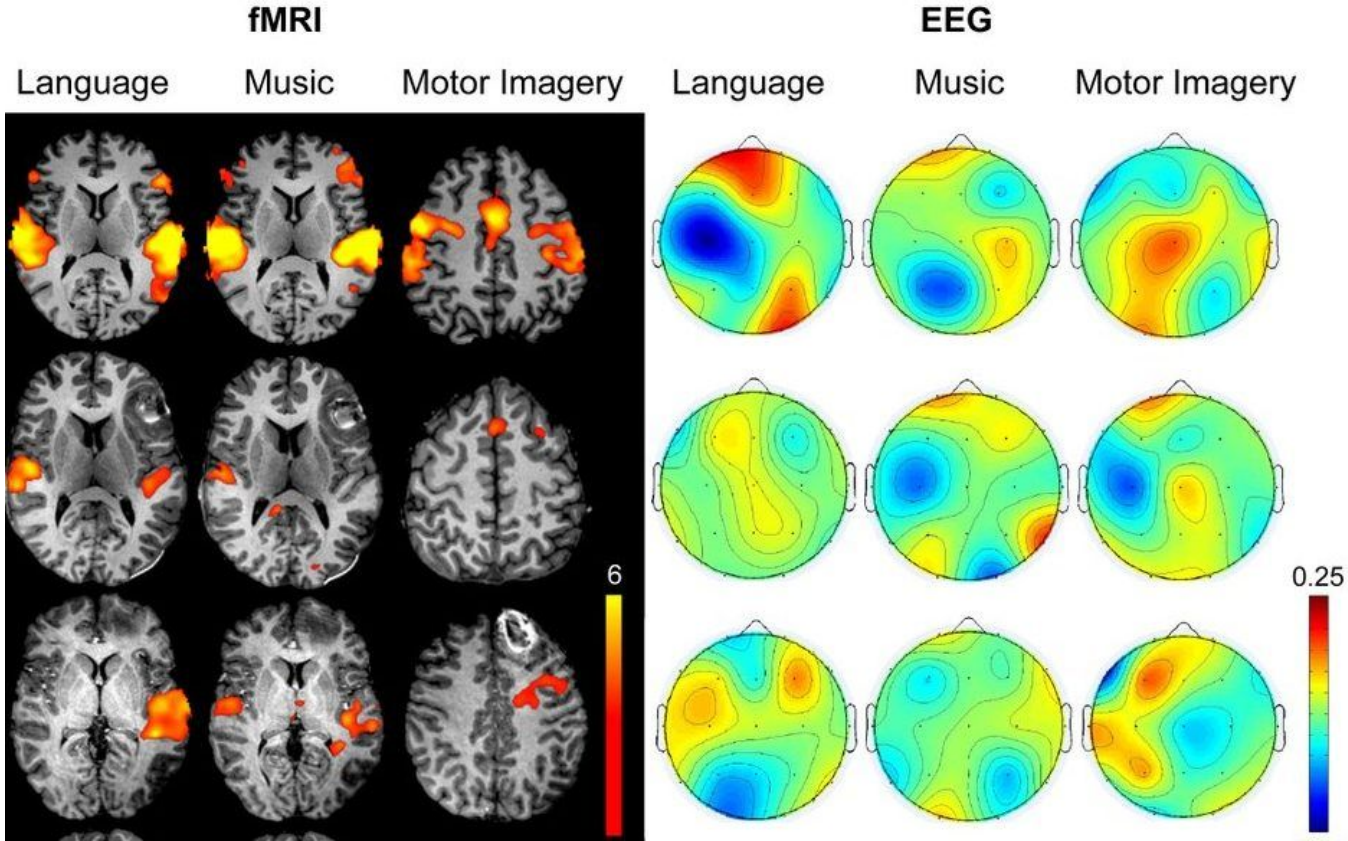
Background - EEG Data

Spatial:

~1-3 mm^3

Temporal:

~0.5 Hz



Spatial:

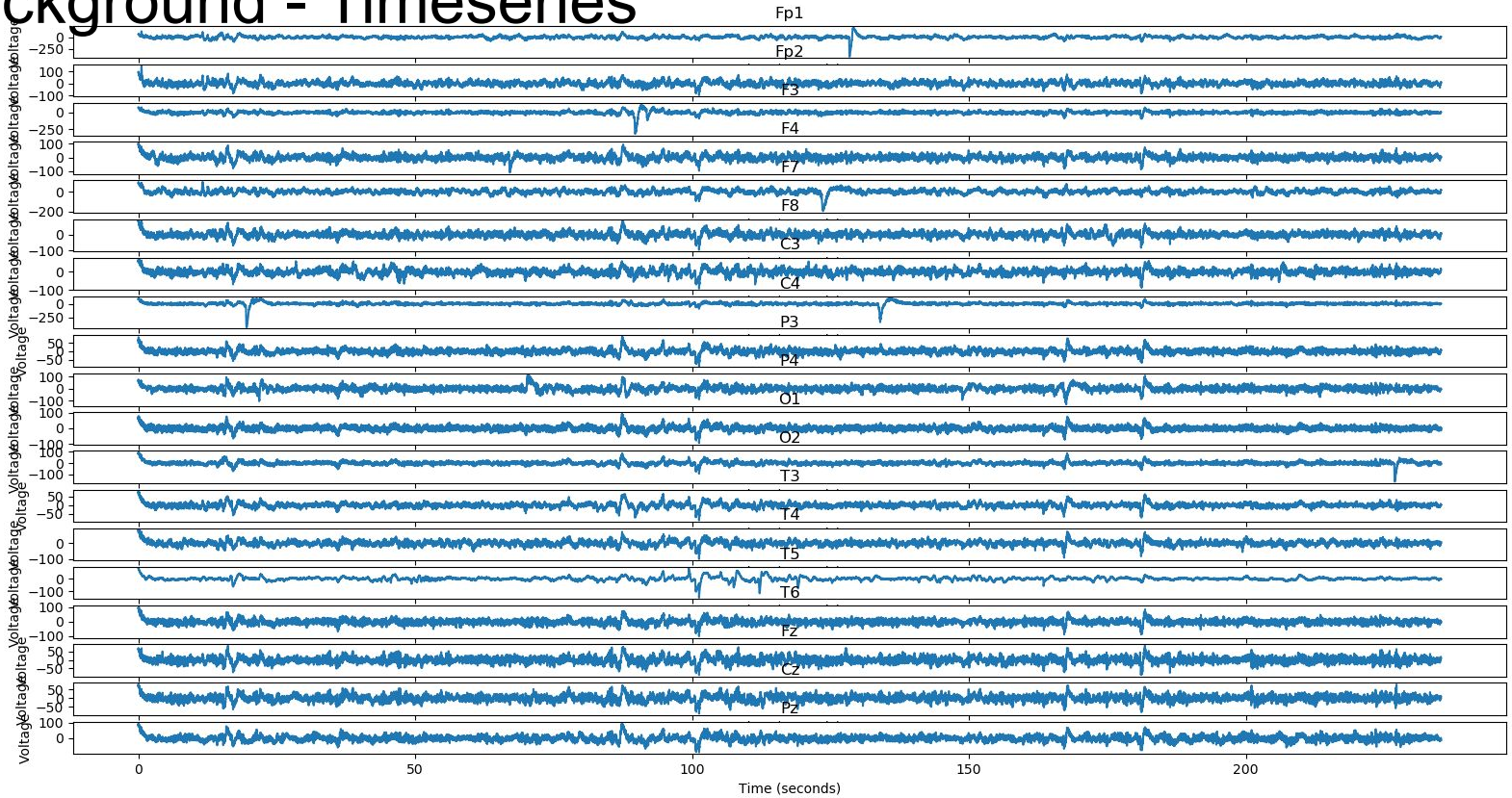
~N/A

Temporal:

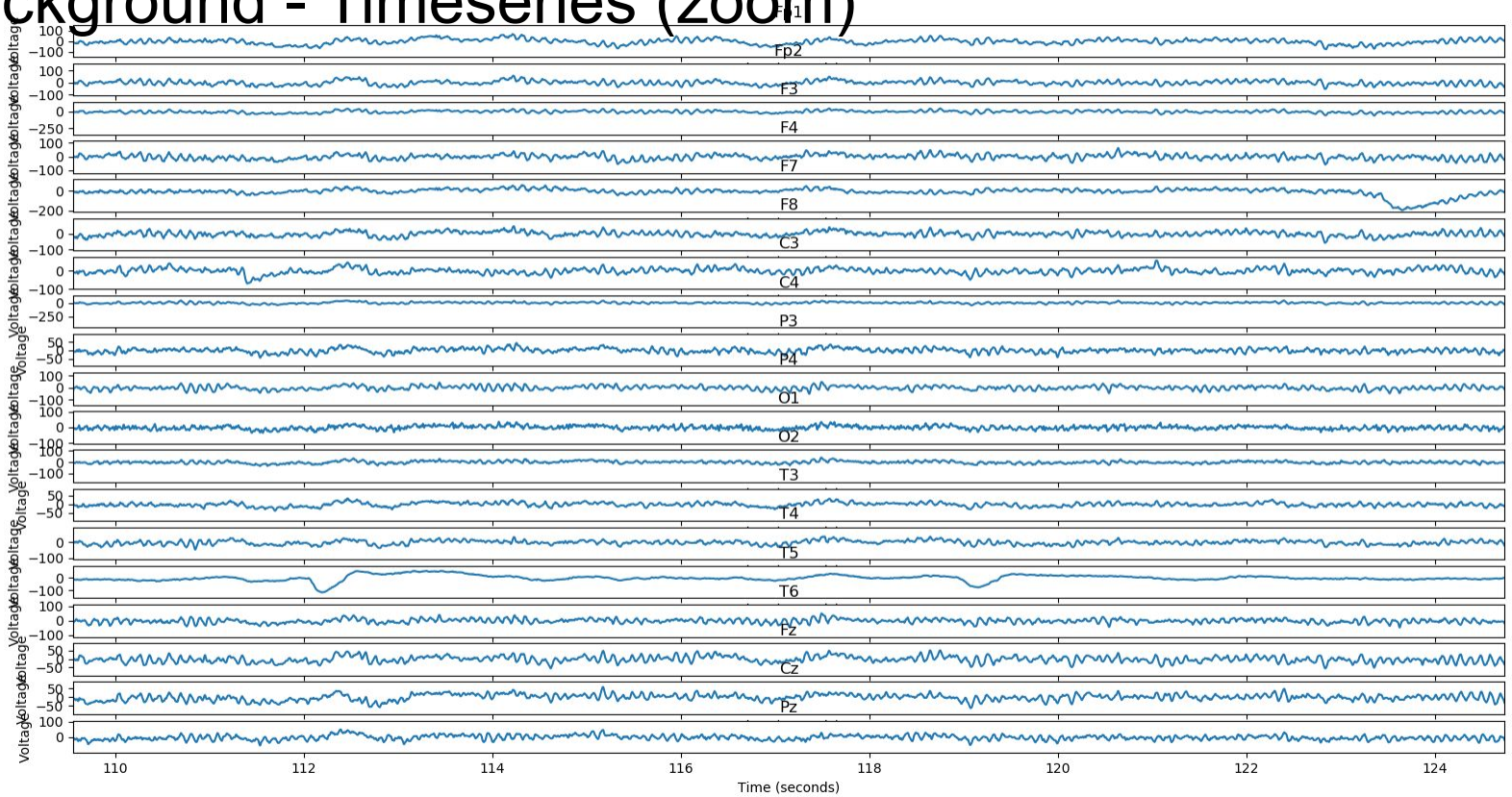
~250 Hz

2.9,2.9,-2.7,1.0,0.5,-2.7,-4.1,3.8,1.8,22.0,14.4,16.4,-6.6,1.5,1.5,17.4,-0.2,2.3,
3.5,3.3,1.9,4.3,1.2,-3.7,2.5,7.1,5.7,22.8,16.6,16.7,-4.5,1.0,2.7,15.8,4.7,8.2,18
2.6,4.0,7.1,11.3,0.4,0.8,10.9,13.1,11.2,24.6,15.8,17.6,-1.1,3.9,4.6,16.3,9.5,15
3.7,5.6,11.1,13.0,3.8,6.5,16.2,14.0,12.5,21.3,9.6,15.7,5.4,6.6,4.5,14.0,11.2,1
6.1,6.4,13.2,10.4,8.3,8.9,17.4,10.5,9.4,13.8,1.8,11.0,9.8,6.8,2.5,7.4,10.7,16.
7.6,6.5,14.4,10.9,9.5,8.4,17.1,8.3,6.2,7.0,-2.0,5.3,9.5,5.4,1.0,1.0,10.7,15.3,1
7.9,7.9,14.9,12.4,9.7,7.8,16.0,7.2,3.8,1.6,-2.5,0.6,9.2,4.1,0.6,-2.6,10.3,13.1,6
7.9,9.6,13.5,10.3,10.2,6.4,12.8,4.4,0.2,-4.7,-4.7,-3.2,11.1,2.4,0.5,-6.1,8.5,8.5
7.5,8.8,9.8,7.5,8.9,3.4,7.9,1.0,-4.7,-11.9,-11.5,-8.9,12.0,-0.6,0.0,-11.5,6.1,2.9
6.7,5.0,5.5,6.8,6.6,0.9,2.7,-1.1,-9.8,-17.4,-18.3,-15.7,10.6,-3.3,-0.4,-15.3,3.8,-
3.9,-0.4,1.2,3.4,5.6,-1.4,-1.8,-2.9,-12.9,-19.4,-17.3,-18.9,9.2,-3.7,-1.1,-14.6,0.
-0.3,-6.2,-2.2,-5.0,6.1,-6.5,-4.6,-6.2,-12.6,-18.6,-9.6,-17.3,8.2,-4.1,-1.4,-12.2,-3
-2.2,-8.5,-3.7,-11.8,6.9,-10.2,-6.3,-9.4,-11.5,-16.5,-3.9,-13.5,5.9,-6.0,-1.1,-10.2
-1.0,-5.7,-5.0,-13.4,6.4,-8.0,-8.1,-10.0,-11.1,-13.5,-3.8,-8.7,1.7,-7.0,-0.6,-6.9,-8
-0.9,-2.3,-7.8,-14.4,2.5,-5.1,-10.1,-10.5,-10.3,-10.8,-5.5,-5.1,-1.8,-6.6,-1.0,-3.6
-2.7,-1.6,-11.0,-16.1,-3.9,-5.3,-10.8,-11.9,-7.8,-10.1,-6.6,-5.9,-2.8,-7.8,-1.9,-3.7
-3.2,-2.9,-11.4,-15.7,-6.6,-6.5,-9.8,-12.3,-4.9,-10.3,-9.6,-9.6,-2.1,-10.2,-2.8,-5.9
-2.8,-5.0,-10.3,-15.5,-3.9,-8.6,-8.3,-11.6,-2.1,-9.6,-11.4,-10.9,-2.2,-11.2,-2.7,-6
-4.8,-7.6,-9.5,-16.6,-2.0,-11.3,-5.9,-10.1,4.0,-5.9,-3.8,-6.6,-3.7,-9.0,-1.6,-4.9,-1

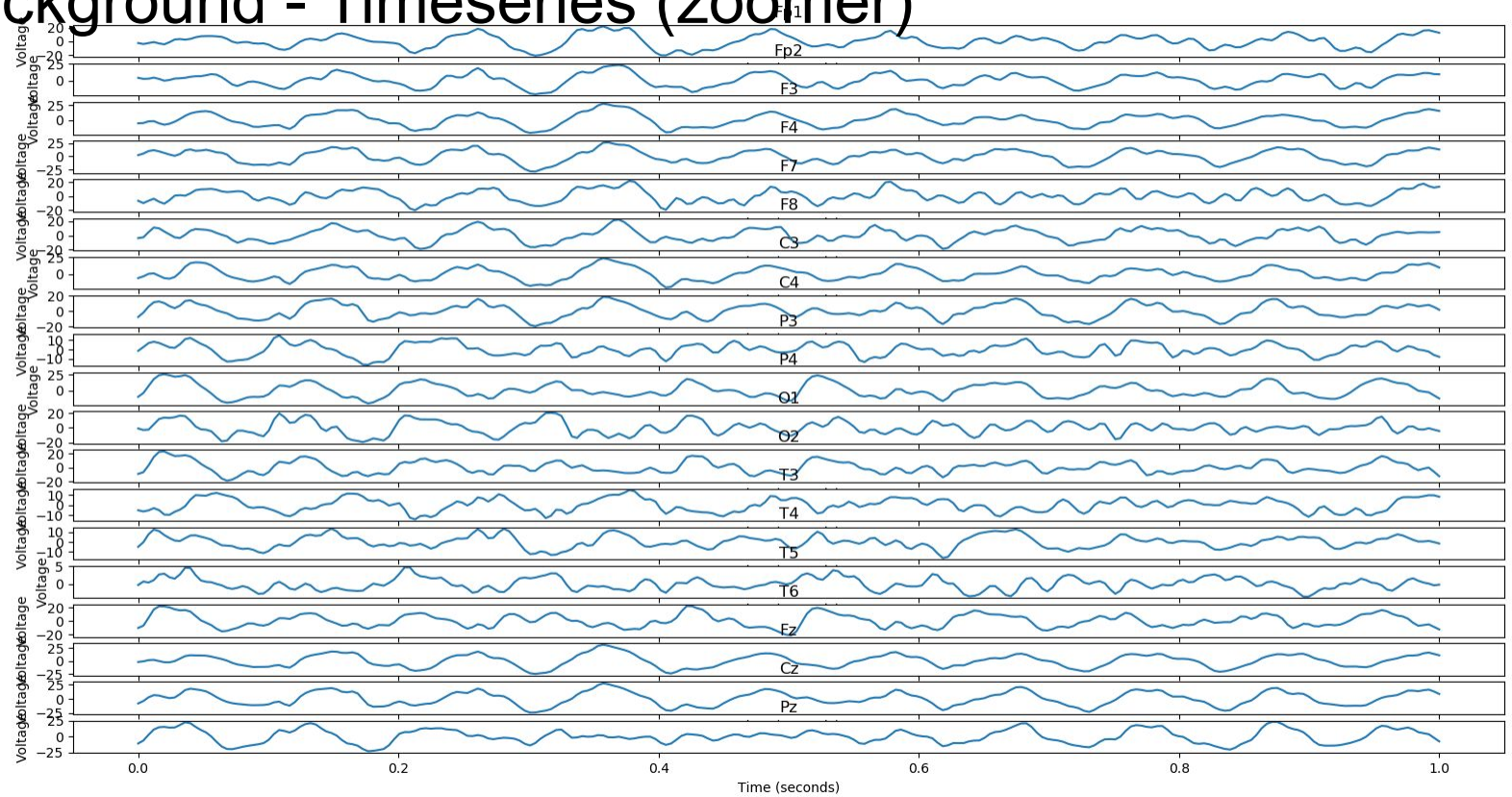
Background - Timeseries



Background - Timeseries (zoom)



Background - Timeseries (zoomer)



Background - Power Spectral Density

Frequency

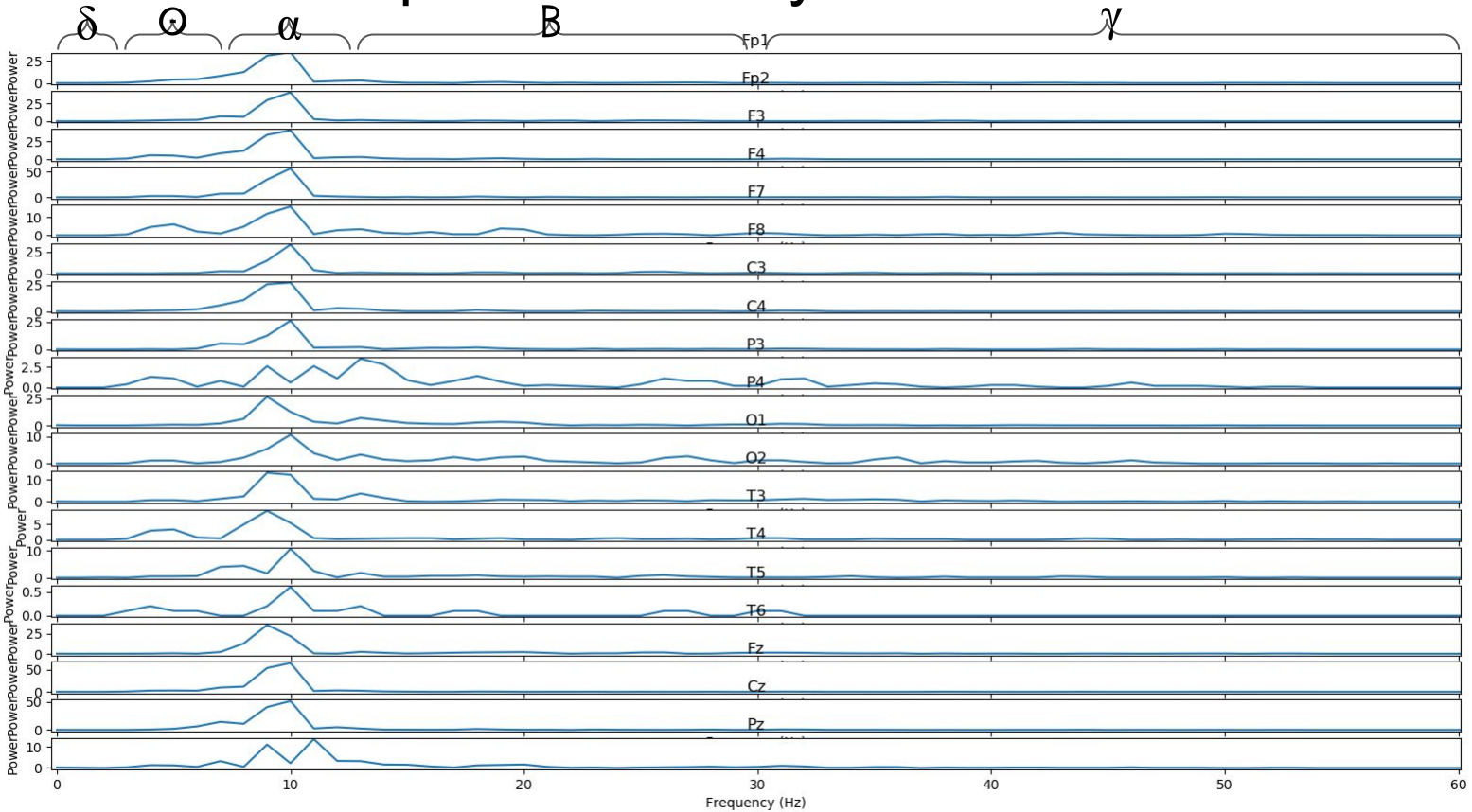
Resolution:

Depends on

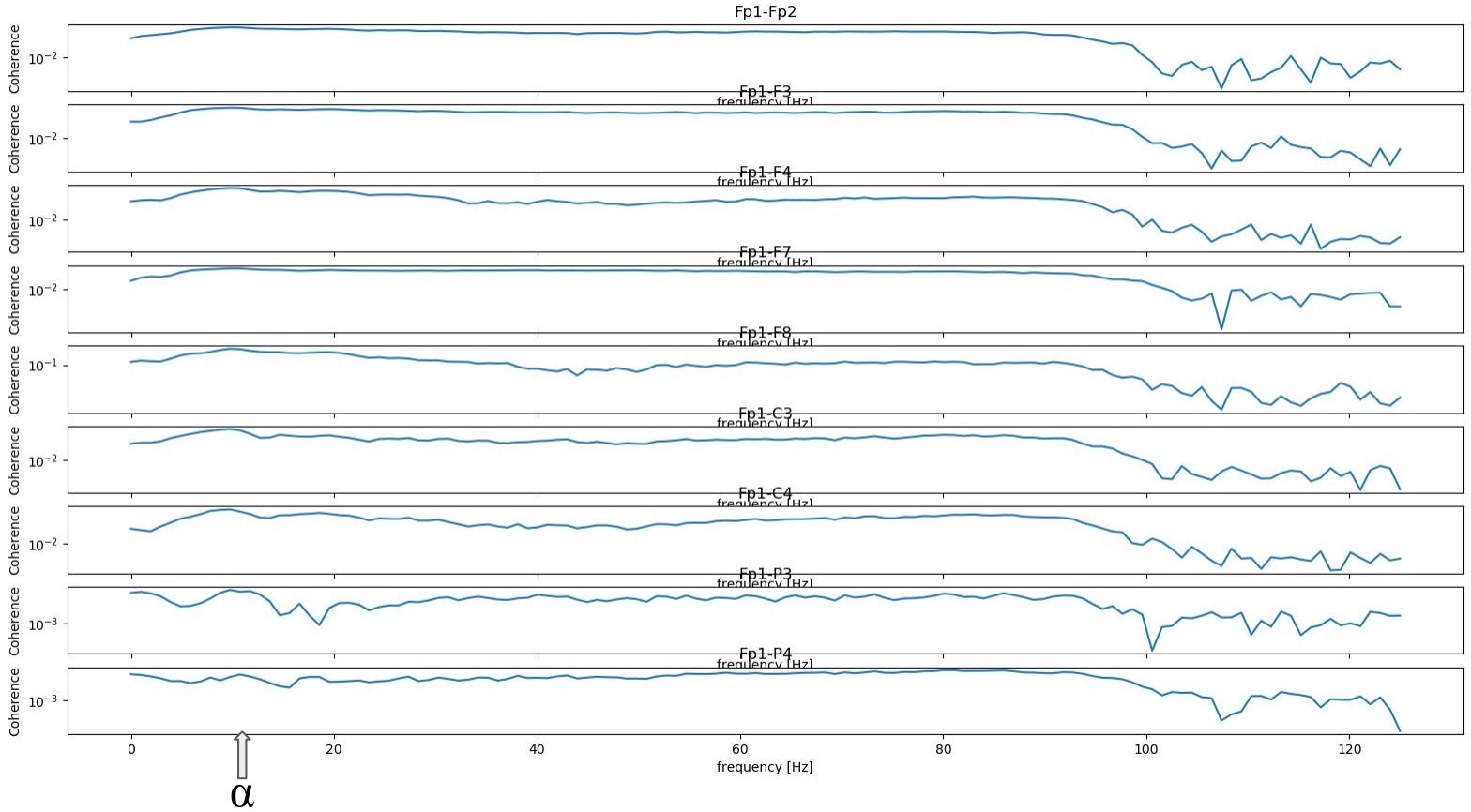
length of input

1 second of input ->

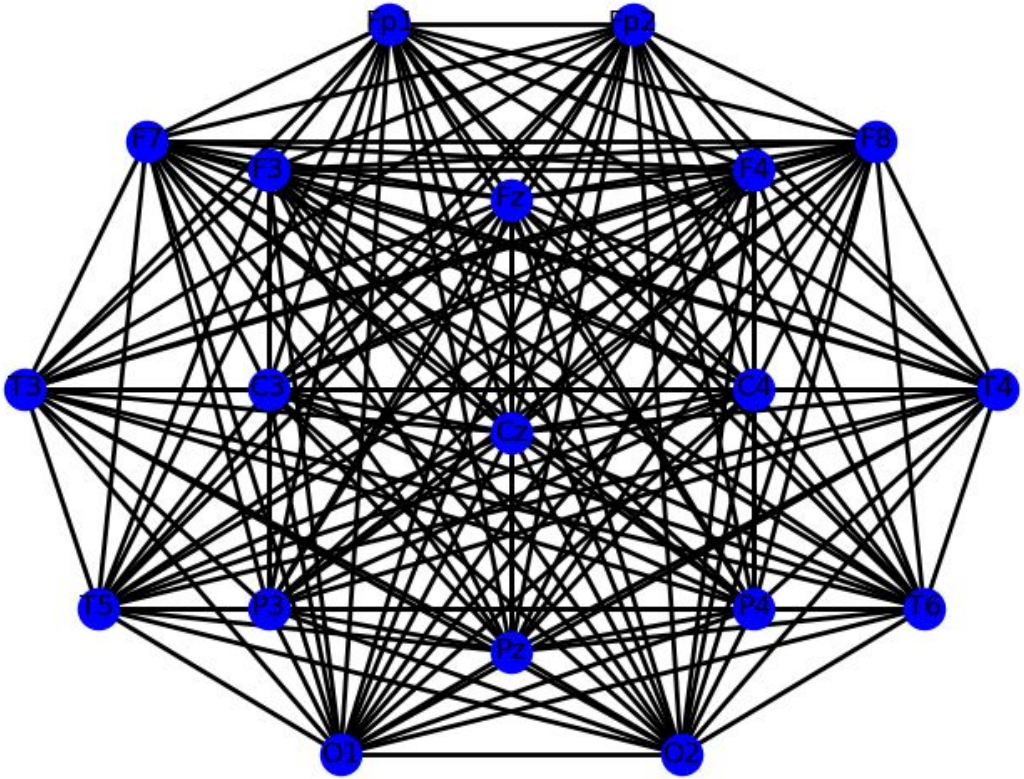
1 Hz spectral resolution



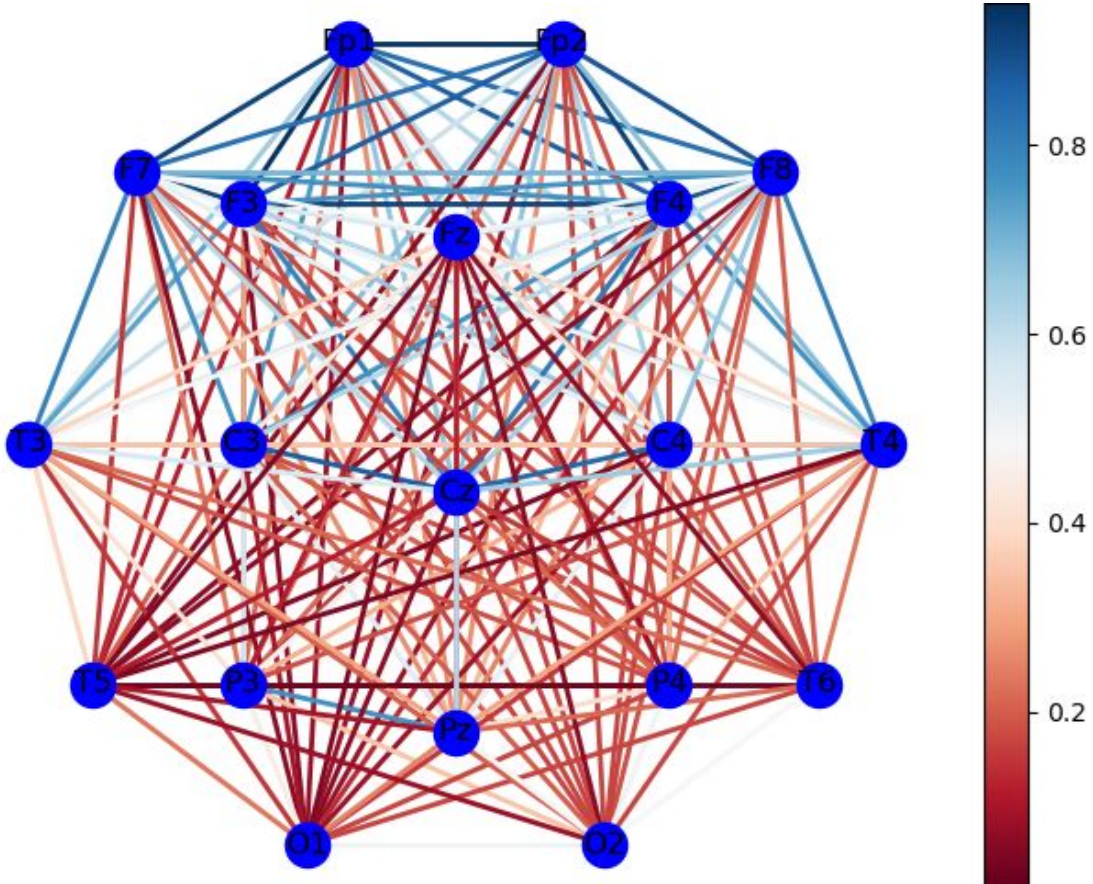
Background - Signal Coherence



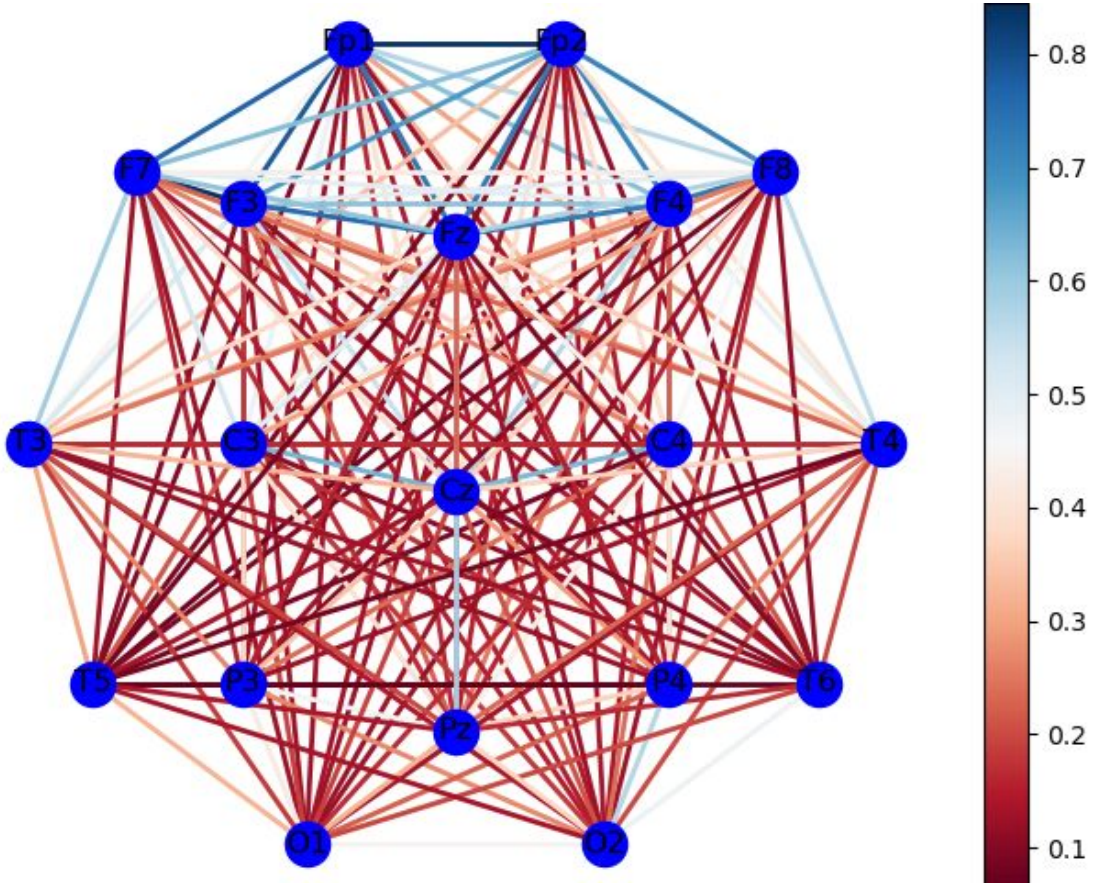
Signal Coherence -> Network



Single-Subject Network (n=1)

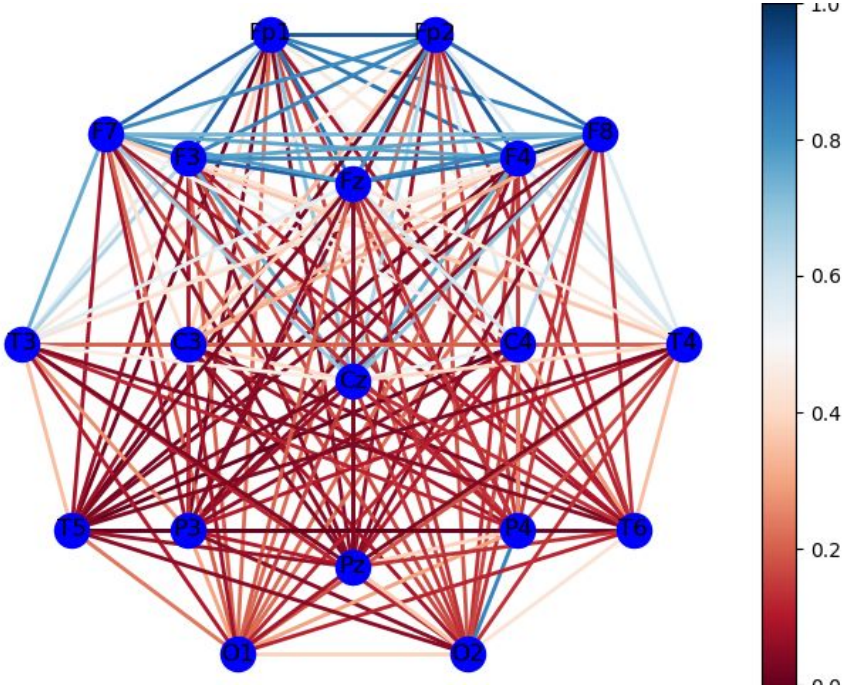


Group Coherence Network (n=20)

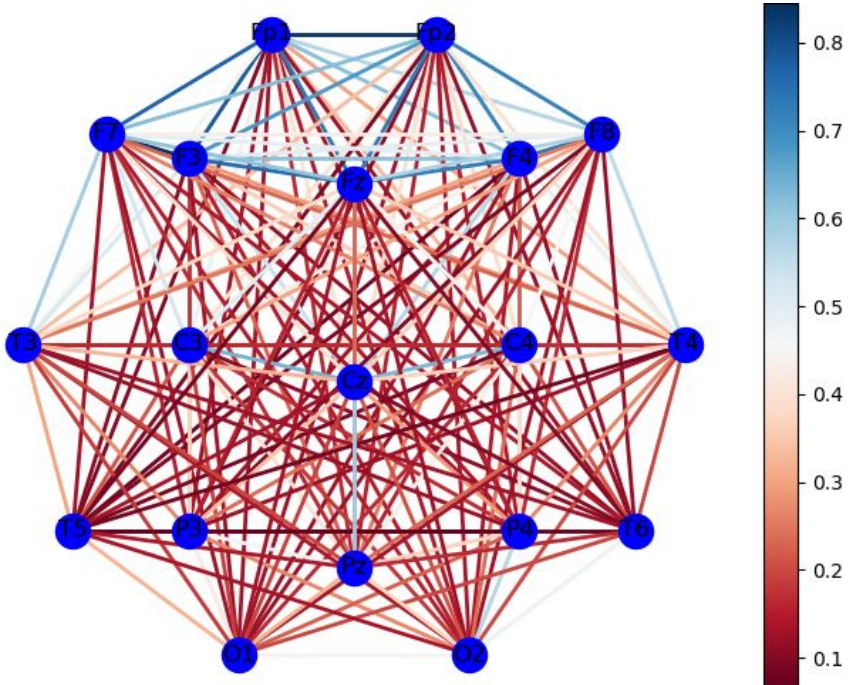


Multiple Groups Network (n=20 healthy, 20 chronic pain)

Healthy

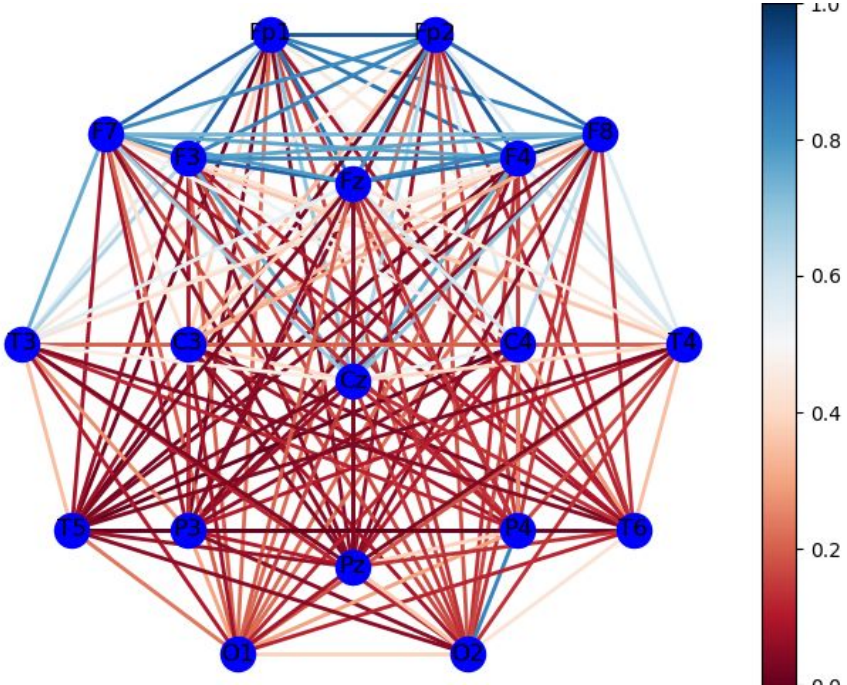
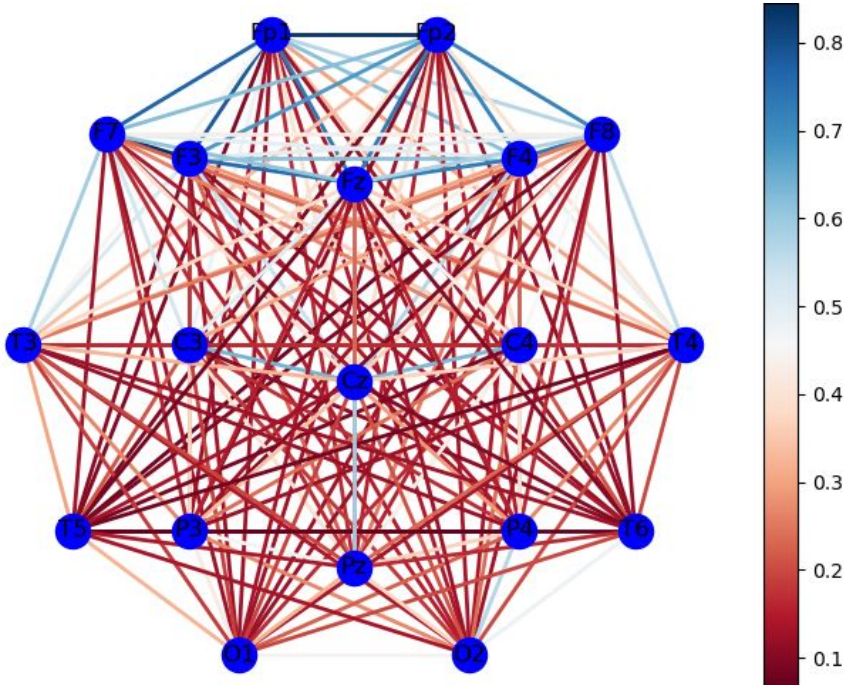


Chronic Pain



Multiple Groups Network (n=20 healthy, 20 chronic pain)

Healthy



Chronic Pain