Katrínartún 2
105 Reykjavík, Iceland
+354 5707170 | noxmedical.com

Nox SAS Comparison Study Notes

The Nox SAS solution is a new, flexible way to record EEG, ECG and EMG data during polysomnography sleep studies conducted with the Nox A1s PSG system. The solution comes with disposable EEG electrodes that are secured to the patient's forehead, a head cable, and body cables. The Nox SAS aims to make the hookup process simple and comfortable for clinicians and patients alike.

The manual scoring for the example studies listed below was performed by Nox Medical's Product Specialist Mitchell Cobcroft, RPSGT, a former senior sleep and respiratory scientist.

The example studies feature conventional PSG and Nox SAS performed simultaneously on the same person for comparison. Please note that these studies were performed prior to the Nox A1s firmware update for Nox SAS cable impedance measurements. The impedances are not correct for these studies as impedance support from SAS was not implemented in Noxturnal at the time of the validation study recording. .

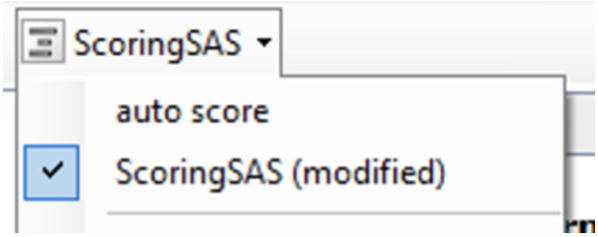
Nox SAS Study:

- Manual sleep staging
- Nox SAS Analysis autoscore

PSG Study:

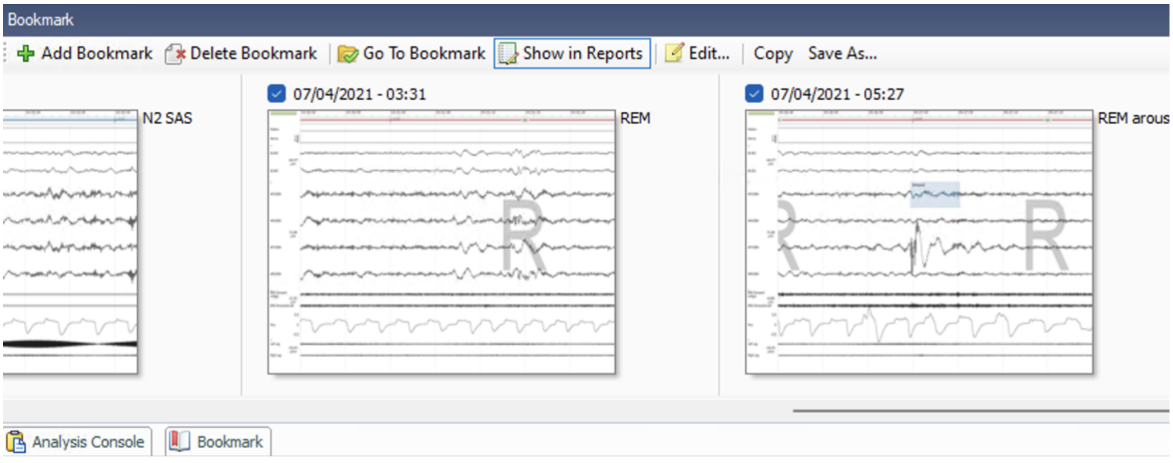
- Manual sleep staging
- Nox PSG Analysis autoscore

Change between the scoring sets in the menu:



PSG Data:

- Each study has example sleep stages in the bookmarks

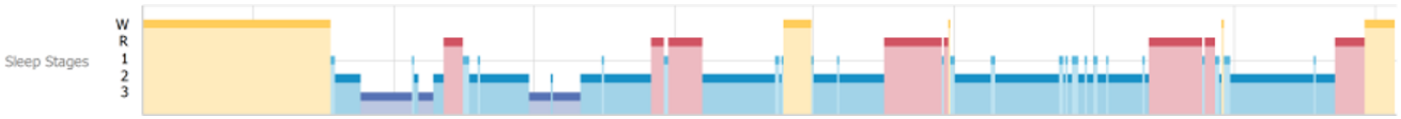


Data Comparison:

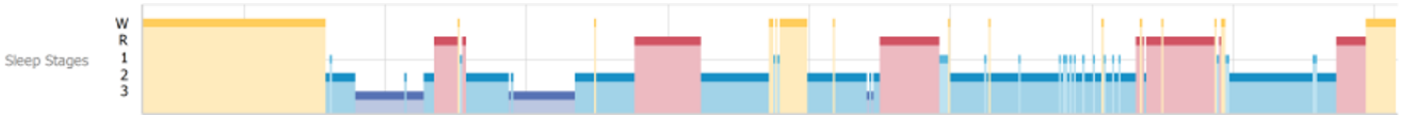
- The table shows a list of sleep and respiratory information from the two studies and scoring sets.
- Same diagnosis for all - Mild OSA
- TST very similar for all
- Sleep cycling very similar for all
- Important note that this was the first SAS study scored without any prior education or experience with SAS for the scorer.
- Scorer feedback - “It took 5-10 minutes to figure out the pattern. Scoring results are essentially the same for these “blind” studies.”
- Both studies show good agreement in terms of clinically significant parameters with manual and auto-score.

	PSG - Manual	SAS - Manual	PSG Auto	SAS Auto
AHI	11.1	11.7	10.3	13.2
ODI	13.9	14.2	14.3	14.9
Classification OSA	Mild	Mild	Mild	Mild
Total Sleep Time (min)	417	415	418	427
Sleep Efficiency (%)	78.6	77.9	78.8	79.6
Wake After Sleep Onset (min)	39.7	39.5	33.5	28.5
Sleep Latency (min)	73.7	77.9	74.2	81.2
REM Latency	124.7	124.4	125.7	129.2
Arousal Index	5.8	10.4	5.2	12.1
Arousal Count (TST)	40	72	36	86
N1 %	5	5.5	3.3	7.4
N1 Duration	21	23	14	31.5
N2 %	48.9	50.5	53.8	58.8
N2 Duration	204	209.5	225	251.5
N3 %	20.9	17.7	19.7	11.1
N3 Duration	87	73.5	82.5	47.5
REM %	25.2	26.3	23.2	22.7
REM Duration	105	109	97	97

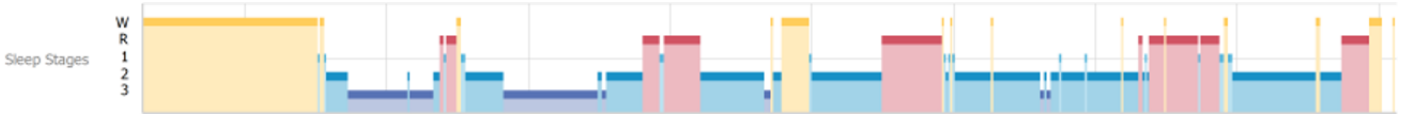
SAS Auto-analysis



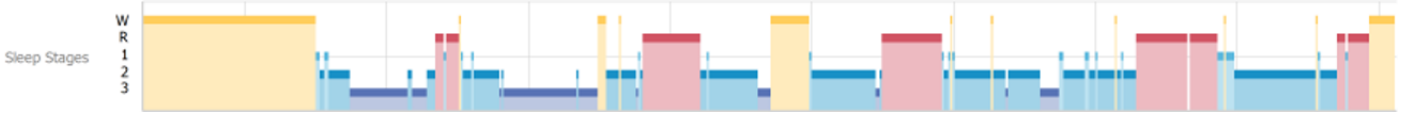
SAS Manual analysis



PSG Auto-analysis



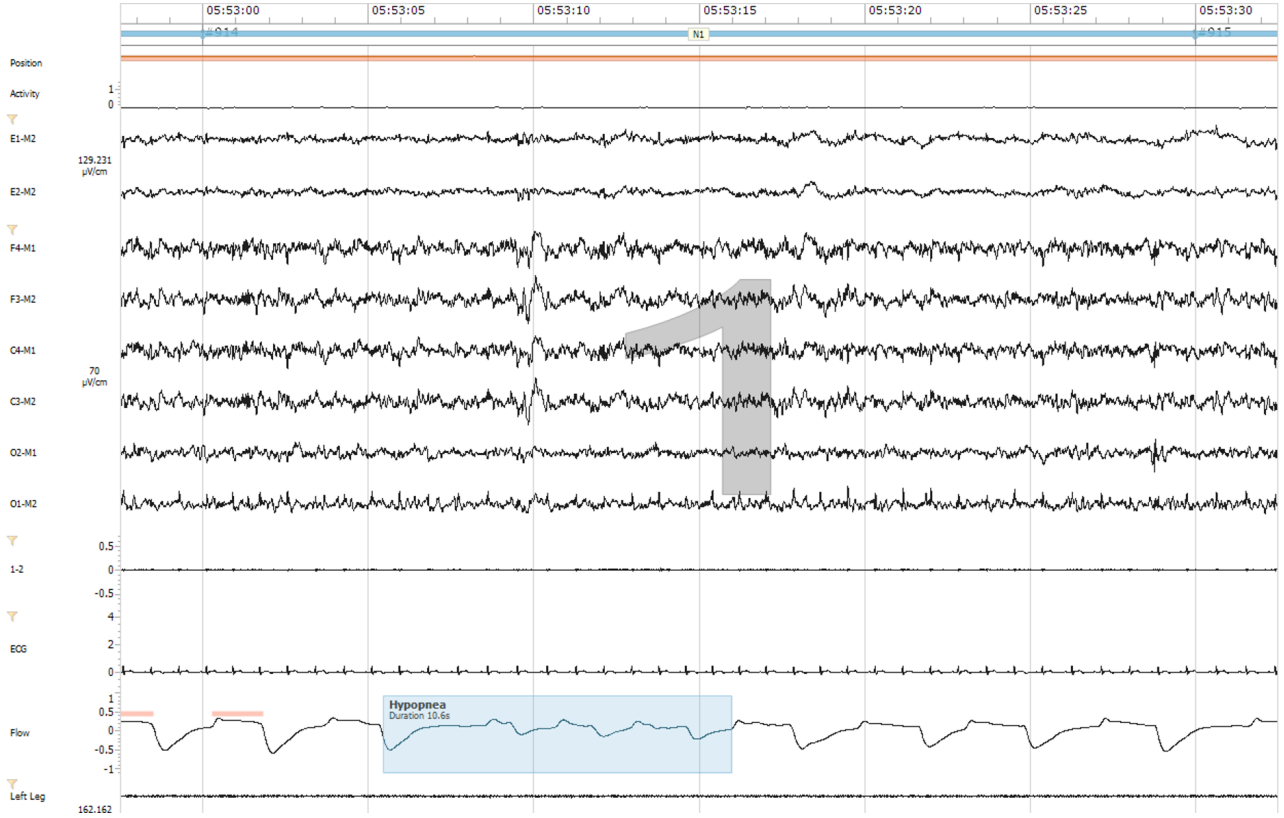
PSG Manual analysis



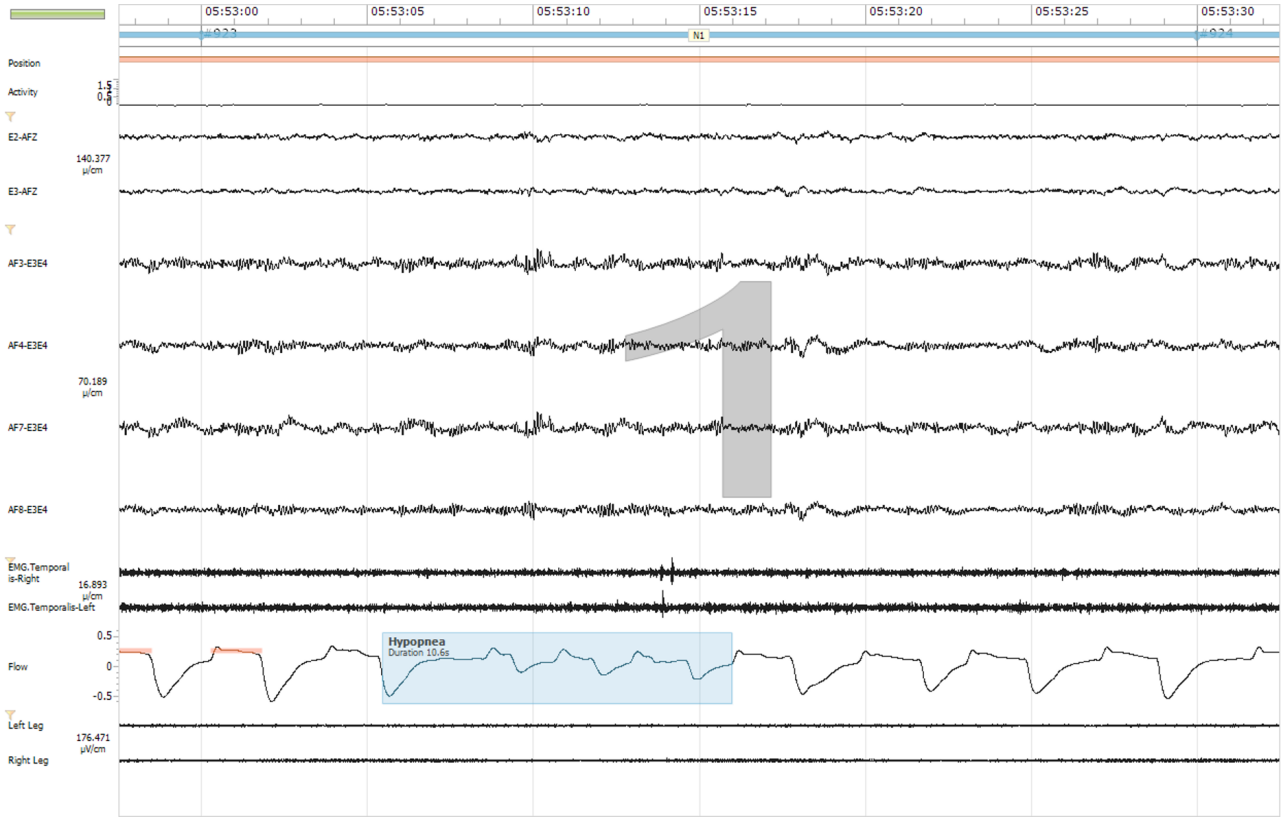
EPOCH Comparison:

Stage N1

N1 PSG

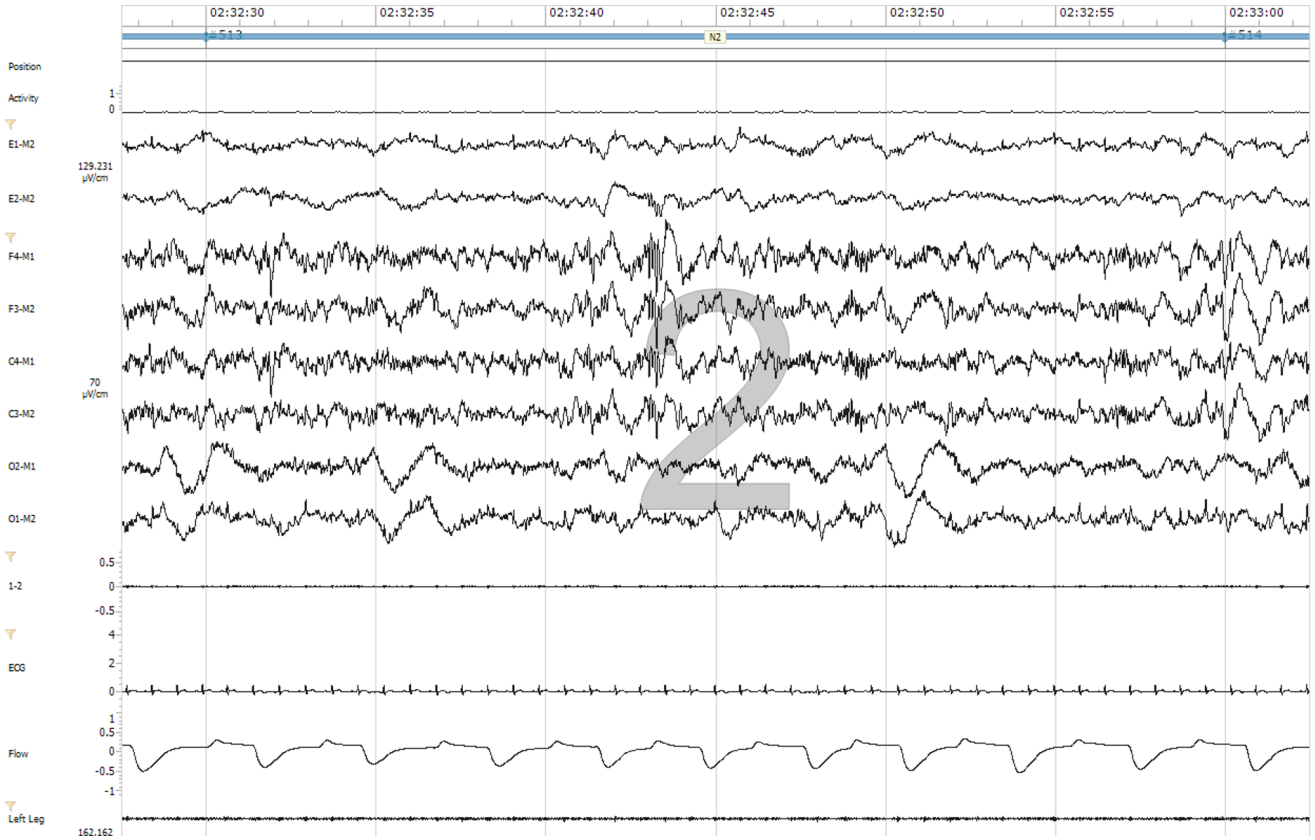


N1 SAS

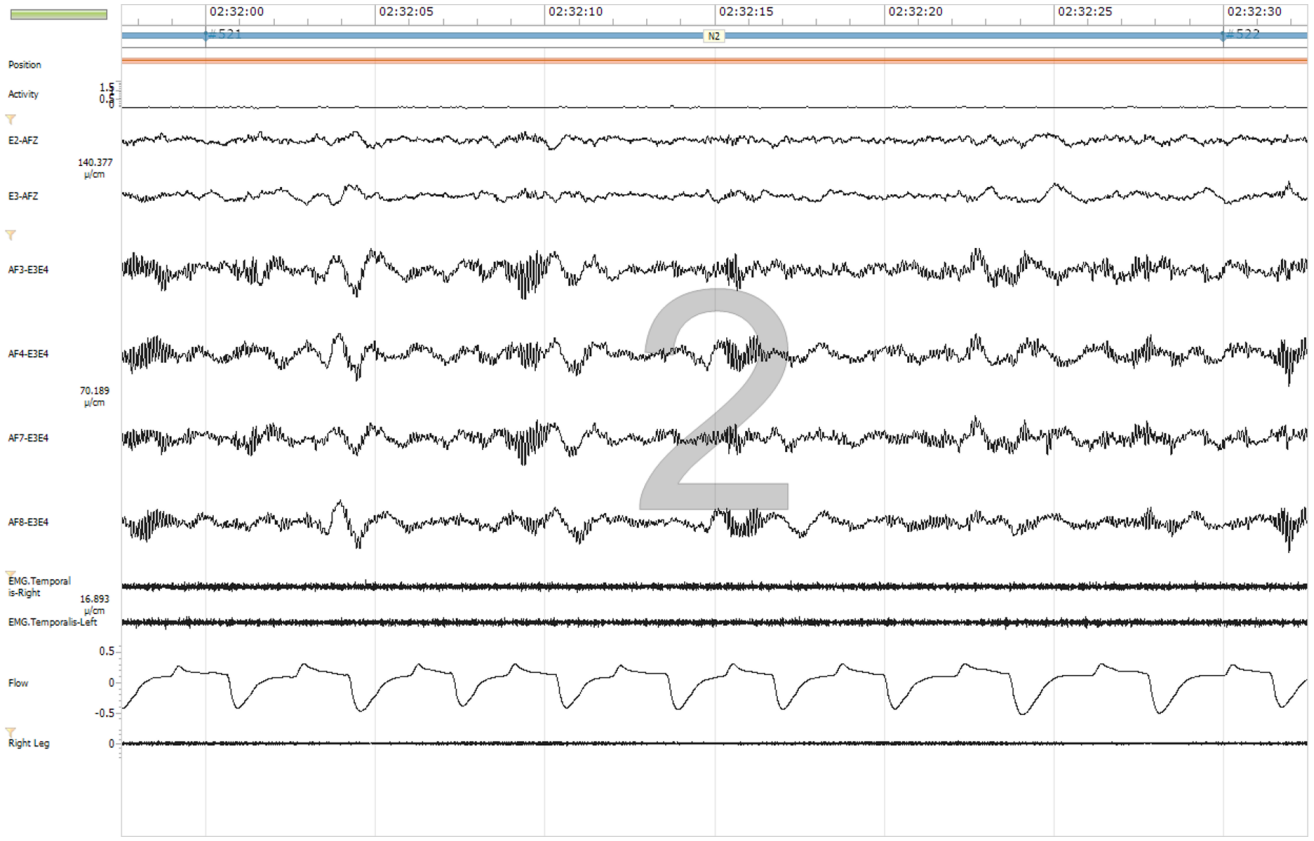


Stage N2

N2 PSG

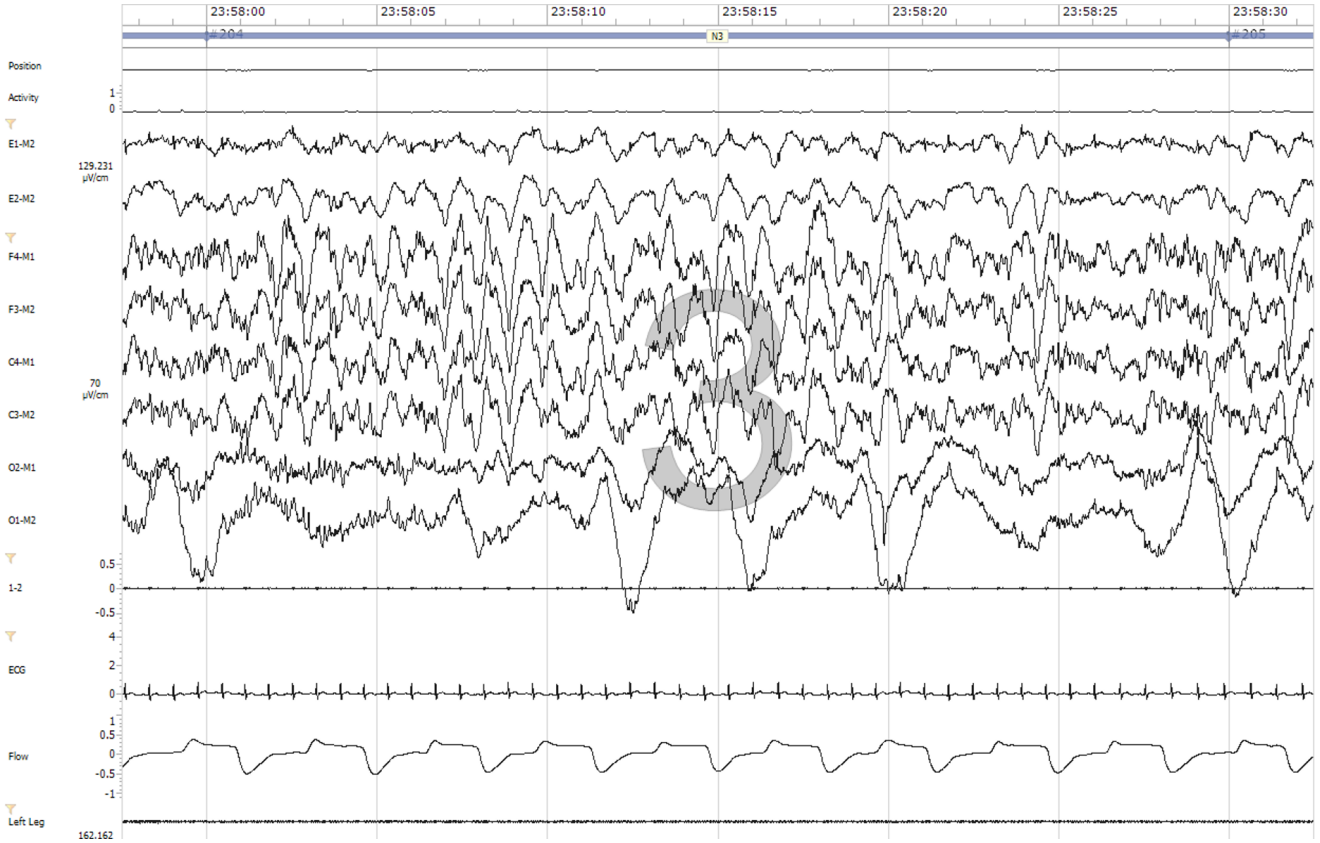


N2 SAS

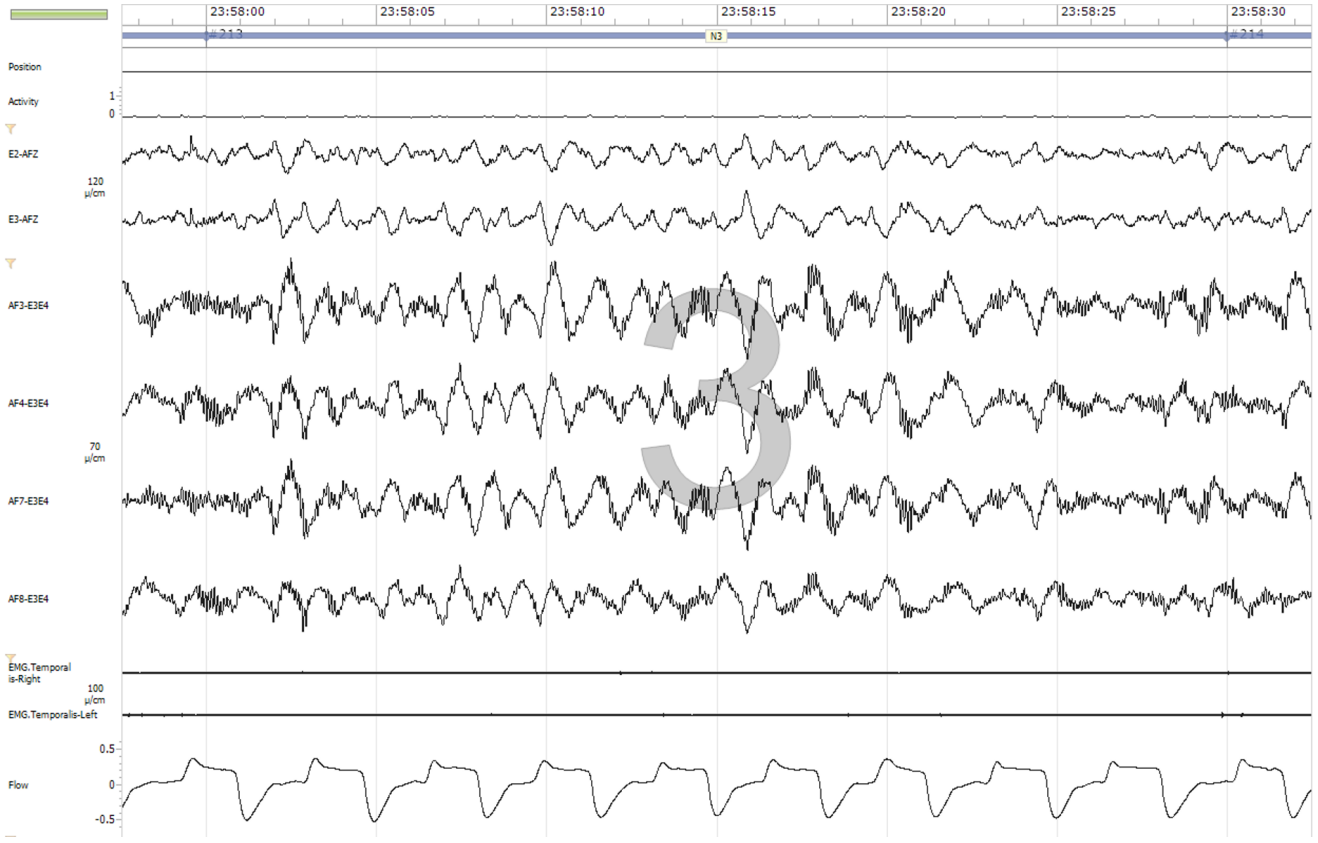


Stage N3

N3 PSG

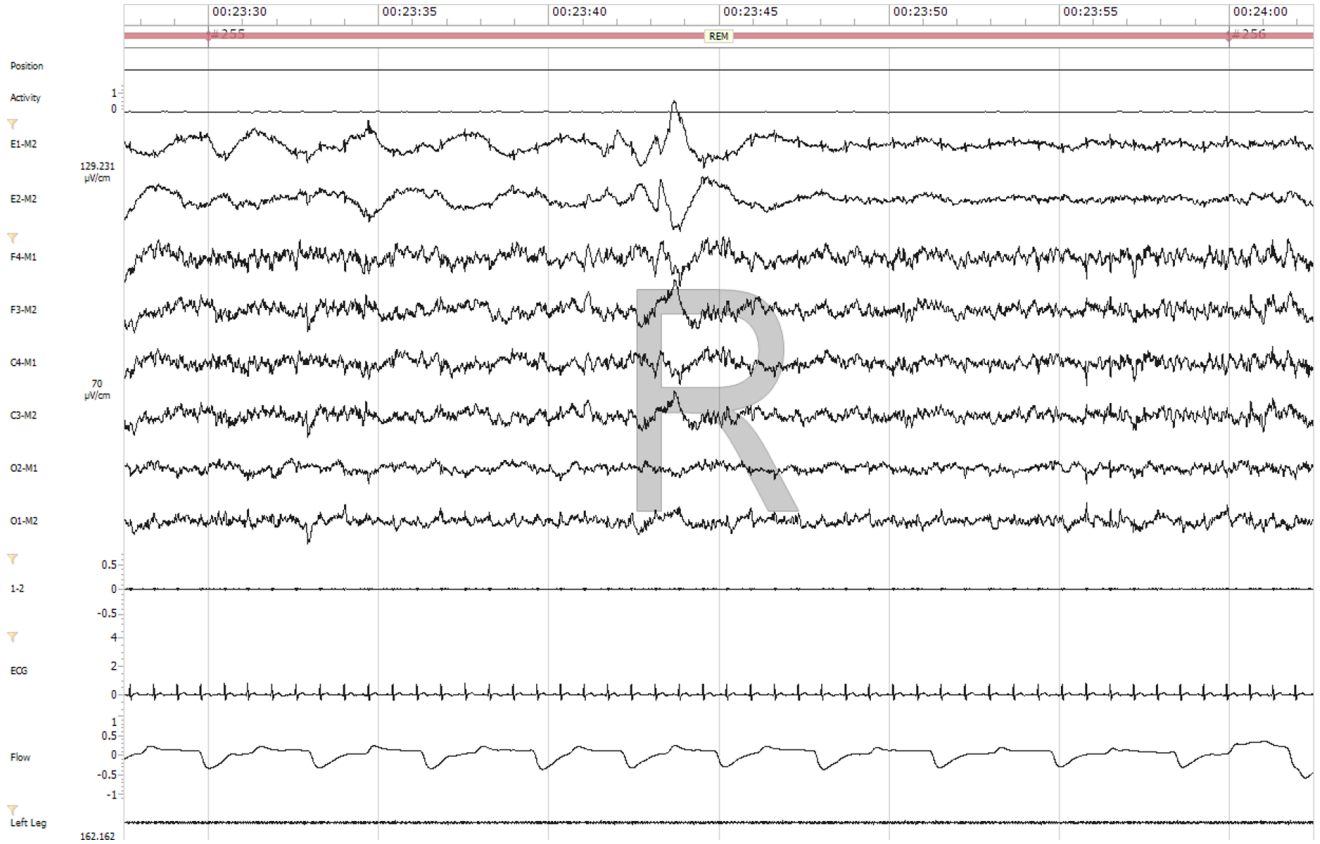

23:58:00
23:58:05
23:58:10
23:58:15
23:58:20
23:58:25
23:58:30
N3
Position
Activity
E1-M2
E2-M2
F4-M1
F3-M2
C4-M1
C3-M2
O2-M1
O1-M2
1-2
ECG
Flow
Left Leg
129.231 µV/cm
70 µV/cm
162.162

N3 SAS

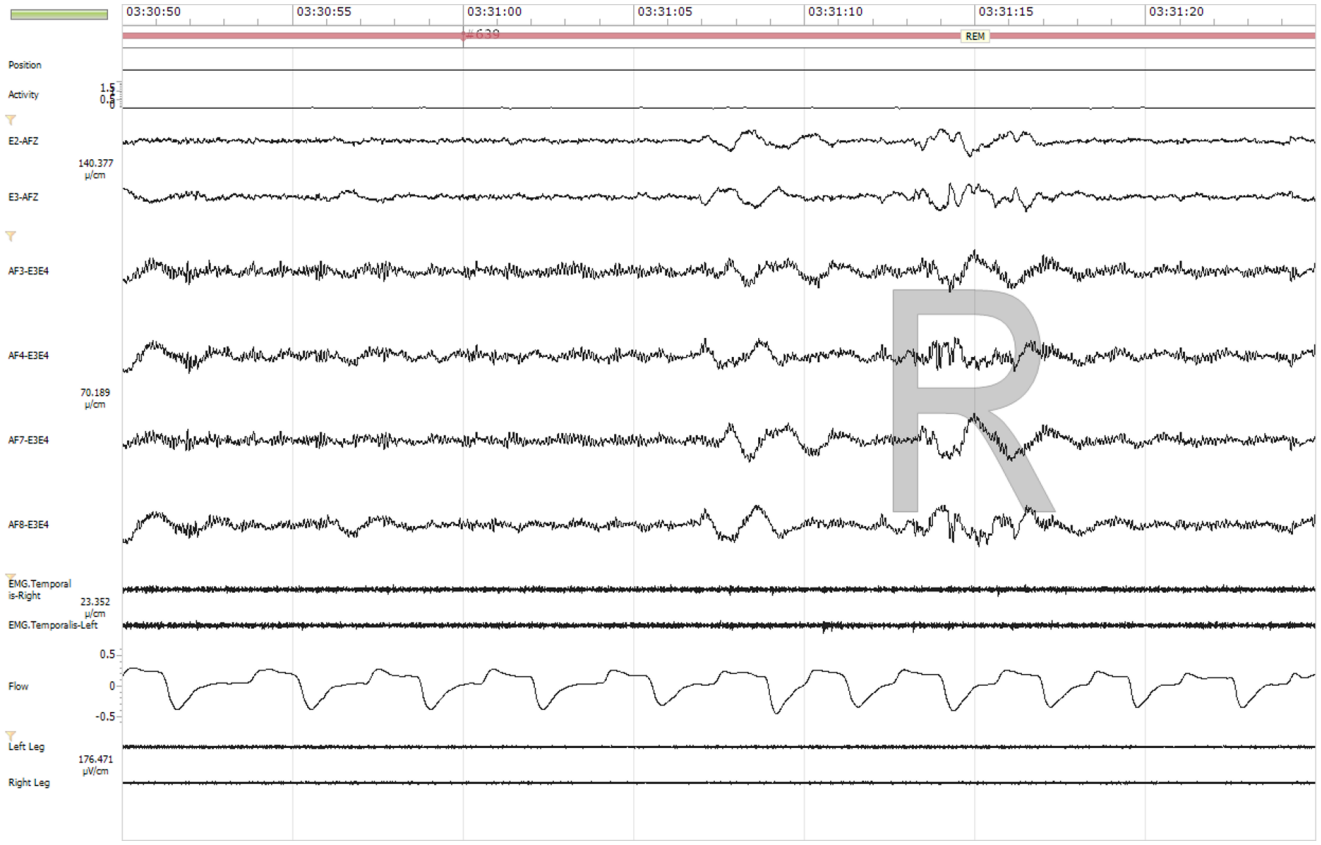

23:58:00
23:58:05
23:58:10
23:58:15
23:58:20
23:58:25
23:58:30
N3
Position
Activity
E2-AFZ
E3-AFZ
AF3-E3E4
AF4-E3E4
AF7-E3E4
AF8-E3E4
EMG.Temporalis-Right
EMG.Temporalis-Left
Flow
120 µ/cm
70 µ/cm
100 µ/cm

Stage REM

REM PSG

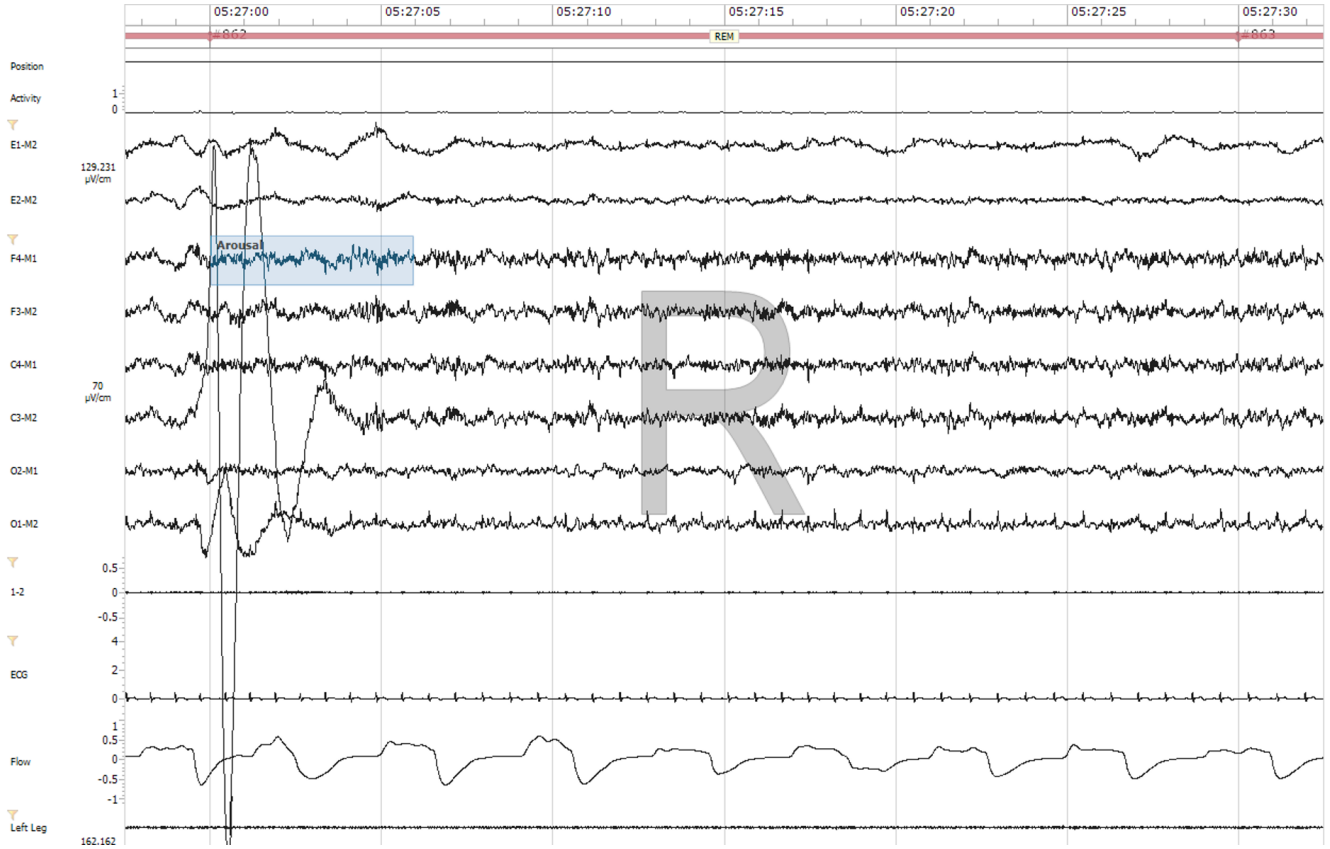


REM SAS

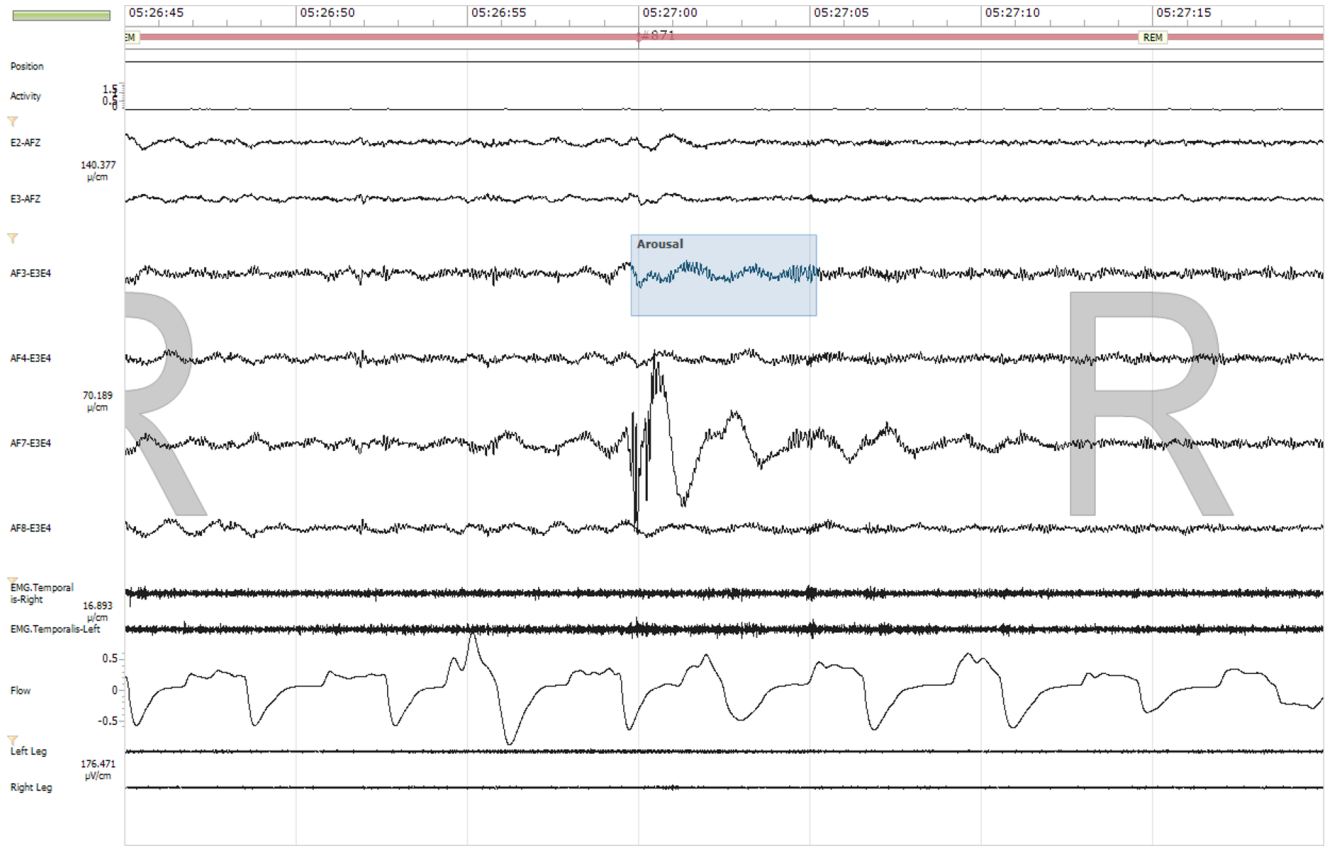


Stage REMN Arousal

REM Arousal PSG

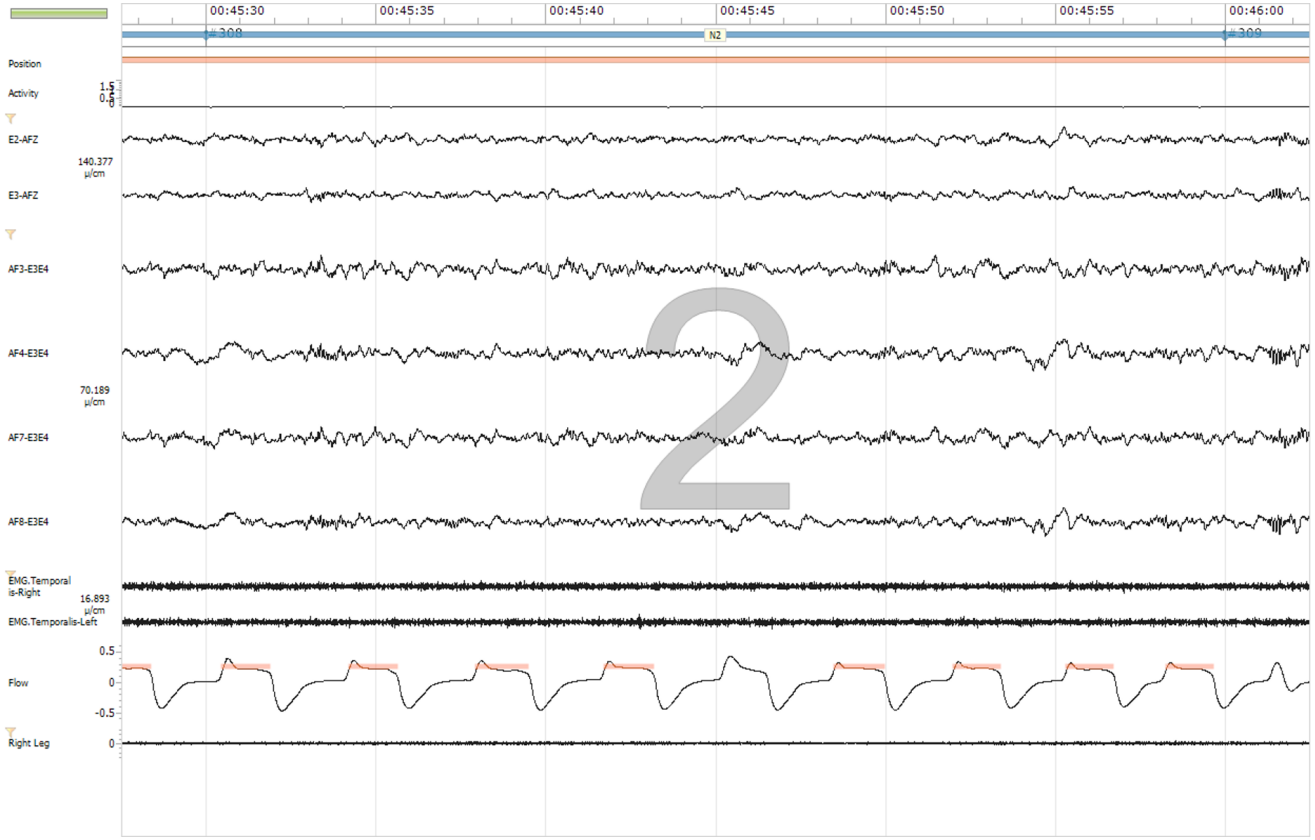


REM Arousal SAS



Frontal Filter examples

Frontal filter OFF



Frontal filter ON - better resolution of N2 physiology and waveform (spindles)