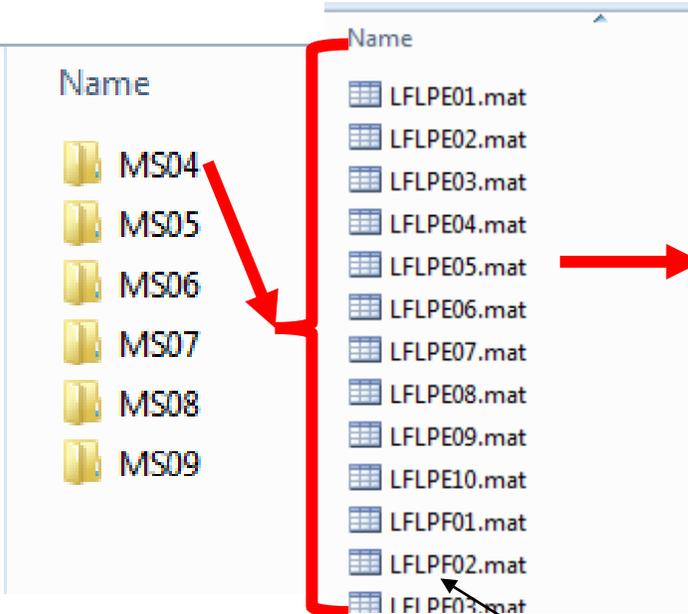


**Data files.** Each folder named MS04-MS09 contains data from 1 animal. Within the folders, .mat files contain 7 data vectors (1 for each electrode) and a time vector. Files are named for the type of stimulus that was applied and which limb it was applied to as per the legend.

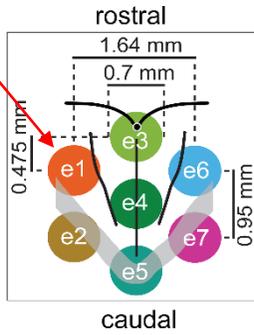
**Data files.** Each vector can be split into separate trials using the time stamps in the “comments.csv” file. See screenshot below. Time stamps are shown in column ‘c’ and the corresponding names of each stimulus used to name the file are found in column ‘d’. Time stamps are in seconds from the beginning of a recording block. Each ‘.mat’ file contains approximately 10 recording trials. The file label corresponds to the stimulus type applied for trials contained in that file.

**Electrodes:**

L1 = e1    M1 = e3    R1 = e6  
 L2 = e2    M2 = e4    R2 = e7  
 M3 = e5



Name	Value
L1	1x3018000 double
L2	1x3018000 double
M1	1x3018000 double
M2	1x3018000 double
M3	1x3018000 double
R1	1x3018000 double
R2	1x3018000 double
samplerate	40000
time	1x3018000 double



**Position 1**  
 R = right  
 L = left

**Position 2-3**  
 HL = hindlimb  
 FL = forelimb

**Position 4**  
 P = proprioception  
 T = tactile

**Position 5**  
 F = flexion  
 E = Extension  
 D = dowel  
 B = brush

**Position 6-7**  
 01-10 = block number which includes approximately 10 trials

**Position 8**  
 m = move; the stimulus onset  
 r = return; the offset of a stimulus

**comments.csv**

	A	B	C	D	E	F
1	*	3910	7.005625	RHLPF01m		
2	*	3890	10.985	RHLPF01r		
3	*	3911	11.81048	RHLPF01m		
4	*	3976	15.49428	RHLPF01r		
5	*	3912	16.43175	RHLPF01m		
6	*	3902	20.04543	RHLPF01r		
7	*	3913	20.98798	RHLPF01m		
8	*	3977	24.62113	RHLPF01r		
9	*	3914	25.60833	RHLPF01m		
10	*	3978	29.32885	RHLPF01r		
11	*	3915	30.31623	RHLPF01m		
12	*	3979	33.94985	RHLPF01r		
13	*	3916	34.92233	RHLPF01m		
14	*	3980	38.5192	RHLPF01r		
15	*	3917	39.53615	RHLPF01m		
16	*	3981	43.18673	RHLPF01r		
17	*	3918	44.19383	RHLPF01m		
18	*	3982	47.62078	RHLPF01r		
19	*	3919	48.86533	RHLPF01m		
20	*	3983	52.26068	RHLPF01r		
21	*	3920	7.3000	RHLPF01m		

WindowSet is a nested cell array. In the first layer there are 17x2 cells, pertaining to the 17 different window lengths we used to extract data from somatosensory signals. Column 1 contains the labels for each time window and the corresponding data is contained in column 2. “+0lag” indicates that the data was extracted from the onset of stimulus with 0 ms lag.

	1	2	3
1	'parameters 20ms +0lag'	160x2 cell	
2	'parameters 30ms +0lag'	160x2 cell	
3	'parameters 40ms +0lag'	160x2 cell	
4	'parameters 50ms +0lag'	160x2 cell	
5	'parameters 60ms +0lag'	160x2 cell	
6	'parameters 70ms +0lag'	160x2 cell	
7	'parameters 80ms +0lag'	160x2 cell	
8	'parameters 90ms +0lag'	160x2 cell	
9	'parameters 100ms +0lag'	160x2 cell	
10	'parameters 110ms +0lag'	160x2 cell	
11	'parameters 120ms +0lag'	160x2 cell	
12	'parameters 130ms +0lag'	160x2 cell	
13	'parameters 140ms +0lag'	160x2 cell	
14	'parameters 150ms +0lag'	160x2 cell	
15	'parameters 250ms +0lag'	160x2 cell	
16	'parameters 500ms +0lag'	160x2 cell	
17	'parameters 1000ms +0lag'	160x2 cell	
18			
19			

The cell arrays with 160x2 cells, contain recordings from the 16 different stimulus conditions with 10 repeats each. The name for each stimulus condition is contained in column 1 and the data in column 2.

	1	2
1	'LFLPE01.mat'	212x12 double
2	'LFLPE02.mat'	212x11 double
3	'LFLPE03.mat'	212x11 double
4	'LFLPE04.mat'	212x12 double
5	'LFLPE05.mat'	212x11 double
6	'LFLPE06.mat'	212x11 double
7	'LFLPE07.mat'	212x10 double
8	'LFLPE08.mat'	212x11 double
9	'LFLPE09.mat'	212x12 double
10	'LFLPE10.mat'	212x11 double
11	'LFLPF01.mat'	212x13 double
12	'LFLPF02.mat'	212x11 double
13	'LFLPF03.mat'	212x10 double
14	'LFLPF04.mat'	212x10 double
15	'LFLPF05.mat'	212x12 double
16	'LFLPF06.mat'	212x10 double
17	'LFLPF07.mat'	212x11 double
18	'LFLPF08.mat'	212x10 double
19	'LFLPF09.mat'	212x11 double
20	'LFLPF10.mat'	212x11 double
21	'LFLTB01.mat'	212x10 double
22	'LFLTB02.mat'	212x13 double
23	'LFLTB03.mat'	212x12 double
24	'LFLTB04.mat'	212x11 double
25	'LFLTB05.mat'	212x11 double
26	'LFLTB06.mat'	212x11 double
27	'LFLTB07.mat'	212x12 double
28	'LFLTB08.mat'	212x11 double
29	'LFLTB09.mat'	212x10 double
30	'LFLTB10.mat'	212x11 double
31	'LFLTD01.mat'	212x12 double
32	'LFLTD02.mat'	212x11 double
33	'LFLTD03.mat'	212x10 double
34	'LFLTD04.mat'	212x10 double
35	'LFLTD05.mat'	212x12 double
36	'LFLTD06.mat'	212x11 double

The data matrices have 212 rows. Rows 1-28 are each of the 28 input features extracted from each stimulus trial (number of columns), which were recorded from electrode 1 (e1) . Only the first 22 of these features were used for analysis in our paper. The next 28 rows contains the same feature set extracted from signals recorded from electrode 2 (e2) and so on, up to electrode 7 (e7) finishing at row 196. Rows 197-212 are binary values. The row containing 1's indicates which stimulus type was applied which can be used for classification outputs.

The order of the input features for rows 1-196 and for stimulus types for the 16 rows (197-212) are shown below.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2.4964e-04	3.4375e-04	0	1.8888e-04	0	0	0	0	1.5079e-04	0	0	0	0
2	1.5137e-04	7.3470e-04	0	5.5056e-05	0	0	0	0	6.3826e-06	0	0	0	0
3	371.4833	23.7595	0	179.1252	0	0	0	0	119.0117	0	0	0	0
4	1.5137e-04	3.9016e-04	0	5.5056e-05	0	0	0	0	6.3826e-06	0	0	0	0
5	1	2	1	0	0	0	0	0	1	3	0	0	0
6	5	3	1	0	0	0	0	0	1	3	0	0	0
7	14.1211	11.6096	9.0399	0	0	0	0	0	9.9258	17.5992	0	0	0
8	0.0026	0.0025	0.0019	0	0	0	0	0	0.0022	0.0022	0	0	0
9	0.0329	0.0181	-0.0027	0.0051	-0.0014	-0.0037	-0.0031	-6.4352e-04	0.0177	-0.0038	0.0041	-0.0038	0
10	-77.5463	-72.5306	-80.1003	-85.4207	-83.9635	-93.4576	-84.5055	-74.4889	-94.5655	-73.4299	-79.6831	-78.2944	0
11	-77.5463	-72.5627	-80.1296	-85.4496	-83.9733	-93.4835	-84.5323	-74.5206	-94.3775	-73.4600	-79.7143	-78.3250	0
12	-77.5896	-72.6331	-80.1808	-85.5130	-83.9949	-93.5403	-84.5910	-74.5901	-92.6309	-73.5260	-79.7826	-78.3921	0
13	-78.1888	-73.6018	-80.9317	-86.3868	-84.3129	-94.3087	-85.3886	-75.5469	-90.7590	-74.4333	-80.7223	-79.3113	0
14	-80.3090	-76.9858	-83.4235	-89.4768	-85.6227	-95.3656	-88.0290	-78.9101	-90.6174	-77.5906	-83.9934	-82.4587	0
15	-95.6838	-93.6690	-95.6518	-99.8111	-96.4376	-97.4909	-97.8720	-96.6926	-94.3417	-96.9631	-94.8324	-97.6000	0
16	-93.8929	-96.7685	-99.9017	-100.8876	-101.8278	-101.0228	-100.2530	-97.4154	-94.3412	-97.6101	-97.3679	-97.7491	0
17	-98.0566	-96.9612	-96.0700	-97.9626	-97.0275	-99.4776	-103.2409	-101.7790	-98.8863	-97.9459	-97.6090	-101.4498	0
18	-95.2493	-100.5149	-96.8429	-102.4268	-99.1888	-99.7706	-101.2829	-99.9613	-99.2279	-103.2881	-100.6989	-100.2163	0
19	-96.0839	-102.5148	-103.4462	-102.8059	-99.1746	-104.4968	-102.1920	-104.6840	-98.6023	-97.3732	-101.4895	-101.3668	0
20	-102.3850	-101.2295	-105.4469	-103.2573	-106.2500	-105.2001	-103.9664	-104.8945	-105.1574	-104.6319	-105.6837	-103.4891	0
21	-100.7803	-102.6872	-106.7681	-106.7289	-107.1811	-107.1615	-107.9231	-106.7207	-106.7302	-107.6487	-105.6541	-102.4714	0
22	-100.5553	-100.8337	-104.8527	-105.0946	-101.8352	-108.9021	-106.1822	-103.7725	-104.6719	-102.1729	-104.3102	-105.6492	0
23	3.9159e-04	2.7542e-04	8.4141e-05	0	7.8791e-05	0	0	0	1.0122e-04	9.2914e-05	0	0	0
24	3.6120e-04	2.5209e-04	1.1066e-04	0	7.5676e-05	0	0	0	3.8030e-05	1.3196e-04	0	0	0
25	246.2069	300.9513	325.1468	0	283.3952	0	0	0	175.1468	225.1037	0	0	0
26	3.6120e-04	2.5209e-04	1.1066e-04	0	7.5676e-05	0	0	0	3.8030e-05	1.3196e-04	0	0	0
27	1	1	1	1	1	1	1	1	1	1	1	1	1
28	4	7	0	2	0	0	0	0	0	2	1	1	1
29	10.5738	12.0950	0	0	13.3400	0	0	0	0	11.1848	10.4960	11.7981	0
30	0.0031	0.0021	0	0	0.0018	0	0	0	0	0.0019	0.0028	0.0024	0
31	0.0253	0.0233	0.0047	-0.0023	0.0042	-0.0022	0.0013	0.0052	-0.0033	0.0067	0.0056	0.0025	0
32	-77.6938	-74.5706	-80.9854	-86.9006	-83.1006	-89.6198	-82.8460	-74.5160	-87.7018	-71.2758	-80.3854	-76.8802	0
33	-77.7178	-74.6041	-81.0127	-86.9312	-83.1246	-89.6362	-82.5105	-74.5463	-87.7080	-71.3072	-80.4173	-76.9107	0

- e1 rows 1-28
- e2 rows 29-56
- e3 rows 57-84
- e4 rows 85-112
- e5 rows 113-140
- e6 rows 141-168
- e7 rows 169-196

193	-104.3052	-103.0629	-111.0813	-103.0498	-106.3257	-107.1801	-103.8164	-101.4370	-105.0971	-103.6852	-102.9988	-107.4087	0
194	-106.1129	-106.8528	-100.8686	-108.7008	-105.5490	-101.8435	-108.4659	-104.8468	-109.5311	-101.2862	-104.8958	-101.7699	0
195	-105.9034	-105.2993	-106.7396	-105.1602	-104.1408	-106.5818	-102.2193	-107.2977	-102.1893	-104.1694	-106.9685	-108.3752	0
196	-79.0762	-79.1263	-87.1480	-86.1660	-81.1500	-82.8851	-86.9881	-74.6290	-87.4991	-75.8163	-82.1014	-78.9746	0
197	0	0	0	0	0	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0	0	0	0	0	0
199	0	0	0	0	0	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0	0	0	0	0	0
201	0	0	0	0	0	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0	0	0	0	0	0
203	0	0	0	0	0	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0	0	0	0	0	0
205	1	1	1	1	1	1	1	1	1	1	1	1	1
206	0	0	0	0	0	0	0	0	0	0	0	0	0
207	0	0	0	0	0	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0	0	0	0	0	0
209	0	0	0	0	0	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0	0	0	0	0	0
211	0	0	0	0	0	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0	0	0	0	0	0
213													

- 1 LF sum burst amps
- 2 LF max burst amps
- 3 LF sum burst widths
- 4 LF mean burst amp
- 5 LF burst count
- 6 HF spike count
- 7 HF mean width
- 8 HF spike amplitude
- 9 HF integral
- 10 LF PSD 4-8 Hz
- 11 LF PSD 8-13 Hz
- 12 LF PSD 13-40 Hz
- 13 LF PSD 40-80 Hz
- 14 LF PSD 80-200 Hz
- 15 HF PSD 200-600 Hz
- 16 HF PSD 600-1000 Hz
- 17 HF PSD 1000-1500 Hz
- 18 HF PSD 1500-2000 Hz
- 19 HF PSD 2000-2500 Hz
- 20 HF PSD 2500-3000 Hz
- 21 HF PSD 3000-3500 Hz
- 22 HF PSD 3500-4000 Hz
- 23 HF PSD 320 Hz
- 24 HF PSD 1030 Hz
- 25 HF PSD 1720 Hz
- 26 HF PSD 2200 Hz
- 27 HF PSD 2800 Hz
- 28 HF PSD max power band