Gareth R Barnes

List of Publications by Year
in descending order

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164 papers	13,889 citations	25014 57 h-index	26591 107 g-index
192 all docs	192 docs citations	192 times ranked	9180 citing authors

#	Article	IF	Citations
1	Investigating the electrophysiological basis of resting state networks using magnetoencephalography. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 16783-16788.	3.3	847
2	Moving magnetoencephalography towards real-world applications with a wearable system. Nature, 2018, 555, 657-661.	13.7	795
3	Good practice for conducting and reporting MEG research. NeuroImage, 2013, 65, 349-363.	2.1	604
4	EEG and MEG Data Analysis in SPM8. Computational Intelligence and Neuroscience, 2011, 2011, 1-32.	1.1	500
5	A new approach to neuroimaging with magnetoencephalography. Human Brain Mapping, 2005, 25, 199-211.	1.9	465
6	Measuring functional connectivity using MEG: Methodology and comparison with fcMRI. NeuroImage, 2011, 56, 1082-1104.	2.1	452
7	A Quantitative Assessment of the Sensitivity of Whole-Head MEG to Activity in the Adult Human Cortex. NeuroImage, 2002, 16, 638-650.	2.1	414
8	Frequency-dependent functional connectivity within resting-state networks: An atlas-based MEG beamformer solution. NeuroImage, 2012, 59, 3909-3921.	2.1	408
9	Measuring functional connectivity in MEG: A multivariate approach insensitive to linear source leakage. NeuroImage, 2012, 63, 910-920.	2.1	333
10	A new generation of magnetoencephalography: Room temperature measurements using optically-pumped magnetometers. NeuroImage, 2017, 149, 404-414.	2.1	329
11	Task-Related Changes in Cortical Synchronization Are Spatially Coincident with the Hemodynamic Response. NeuroImage, 2002, 16, 103-114.	2.1	267
12	Beamformer Analysis of MEG Data. International Review of Neurobiology, 2005, 68, 149-171.	0.9	231
13	The cortical deficit in humans with strabismic amblyopia. Journal of Physiology, 2001, 533, 281-297.	1.3	219
14	Group imaging of task-related changes in cortical synchronisation using nonparametric permutation testing. NeuroImage, 2003, 19, 1589-1601.	2.1	215
15	Optimising experimental design for MEG beamformer imaging. NeuroImage, 2008, 39, 1788-1802.	2.1	213
16	Optically pumped magnetometers: From quantum origins to multi-channel magnetoencephalography. NeuroImage, 2019, 199, 598-608.	2.1	186
17	Movement-Related Changes in Local and Long-Range Synchronization in Parkinson's Disease Revealed by Simultaneous Magnetoencephalography and Intracranial Recordings. Journal of Neuroscience, 2012, 32, 10541-10553.	1.7	176
18	Visual word recognition: the first half second. NeuroImage, 2004, 22, 1819-1825.	2.1	168

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19	GLM-beamformer method demonstrates stationary field, alpha ERD and gamma ERS co-localisation with fMRI BOLD response in visual cortex. NeuroImage, 2005, 26, 302-308.	2.1	167
20	Statistical flattening of MEG beamformer images. Human Brain Mapping, 2003, 18, 1-12.	1.9	163
21	Beamformer reconstruction of correlated sources using a modified source model. NeuroImage, 2007, 34, 1454-1465.	2.1	148
22	A bi-planar coil system for nulling background magnetic fields in scalp mounted magnetoencephalography. NeuroImage, 2018, 181, 760-774.	2.1	143
23	On the Potential of a New Generation of Magnetometers for MEG: A Beamformer Simulation Study. PLoS ONE, 2016, 11, e0157655.	1.1	138
24	MEG beamforming using Bayesian PCA for adaptive data covariance matrix regularization. NeuroImage, 2011, 57, 1466-1479.	2.1	134
25	Human motor cortical beta bursts relate to movement planning and response errors. PLoS Biology, 2019, 17, e3000479.	2.6	134
26	Induced visual illusions and gamma oscillations in human primary visual cortex. European Journal of Neuroscience, 2004, 20, 587-592.	1.2	133
27	Neuronal network pharmacodynamics of GABAergic modulation in the human cortex determined using pharmacoâ€magnetoencephalography. Human Brain Mapping, 2010, 31, 581-594.	1.9	132
28	Measuring temporal, spectral and spatial changes in electrophysiological brain network connectivity. NeuroImage, 2014, 91, 282-299.	2.1	130
29	Algorithmic procedures for Bayesian MEG/EEG source reconstruction in SPM. NeuroImage, 2014, 84, 476-487.	2.1	130
30	Movement-Related Theta Rhythm in Humans: Coordinating Self-Directed Hippocampal Learning. PLoS Biology, 2012, 10, e1001267.	2.6	127
31	Optimized beamforming for simultaneous MEG and intracranial local field potential recordings in deep brain stimulation patients. NeuroImage, 2010, 50, 1578-1588.	2.1	123
32	The use of anatomical constraints with MEG beamformers. NeuroImage, 2003, 20, 2302-2313.	2.1	118
33	The missing link: analogous human and primate cortical gamma oscillations. NeuroImage, 2005, 26, 13-17.	2.1	115
34	IFCN-endorsed practical guidelines for clinical magnetoencephalography (MEG). Clinical Neurophysiology, 2018, 129, 1720-1747.	0.7	111
35	The temporal frequency tuning of human visual cortex investigated using synthetic aperture magnetometry. NeuroImage, 2004, 21, 1542-1553.	2.1	103
36	Medial prefrontal theta phase coupling during spatial memory retrieval. Hippocampus, 2014, 24, 656-665.	0.9	99

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37	Co-registration of magnetoencephalography with magnetic resonance imaging using bite-bar-based fiducials and surface-matching. Clinical Neurophysiology, 2004, 115, 691-698.	0.7	98
38	Dissociating the spatio-temporal characteristics of cortical neuronal activity associated with human volitional swallowing in the healthy adult brain. NeuroImage, 2004, 22, 1447-1455.	2.1	97
39	A tool for functional brain imaging with lifespan compliance. Nature Communications, 2019, 10, 4785.	5.8	96
40	Dynamic recruitment of resting state sub-networks. NeuroImage, 2015, 115, 85-95.	2.1	93
41	Theta oscillations orchestrate medial temporal lobe and neocortex in remembering autobiographical memories. NeuroImage, 2014, 85, 730-737.	2.1	91
42	Realistic spatial sampling for MEG beamformer images. Human Brain Mapping, 2004, 23, 120-127.	1.9	89
43	Towards OPM-MEG in a virtual reality environment. NeuroImage, 2019, 199, 408-417.	2.1	87
44	Evidence for Synergy Between Saccades and Smooth Pursuit During Transient Target Disappearance. Journal of Neurophysiology, 2006, 95, 418-427.	0.9	84
45	Single-subject oscillatory gamma responses in tinnitus. Brain, 2012, 135, 3089-3100.	3.7	84
46	Language dominance and mapping based on neuromagnetic oscillatory changes: comparison with invasive procedures. Journal of Neurosurgery, 2010, 112, 528-538.	0.9	83
47	Source Reconstruction Accuracy of MEG and EEG Bayesian Inversion Approaches. PLoS ONE, 2012, 7, e51985.	1.1	83
48	Synchronization of Medial Temporal Lobe and Prefrontal Rhythms in Human Decision Making. Journal of Neuroscience, 2013, 33, 442-451.	1.7	82
49	Reading Front to Back: MEG Evidence for Early Feedback Effects During Word Recognition. Cerebral Cortex, 2014, 24, 817-825.	1.6	82
50	Wearable neuroimaging: Combining and contrasting magnetoencephalography and electroencephalography. NeuroImage, 2019, 201, 116099.	2.1	82
51	Real-time imaging of human cortical activity evoked by painful esophageal stimulation. Gastroenterology, 2005, 128, 610-619.	0.6	81
52	Decreased Gray Matter Concentration in the Lateral Geniculate Nuclei in Human Amblyopes. , 2010, 51, 1432.		81
53	Functional Evidence for a Dual Route to Amygdala. Current Biology, 2012, 22, 129-134.	1.8	81
54	High precision anatomy for MEG. NeuroImage, 2014, 86, 583-591.	2.1	80

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55	The Neural Dynamics of Novel Scene Imagery. Journal of Neuroscience, 2019, 39, 4375-4386.	1.7	74
56	Balanced, bi-planar magnetic field and field gradient coils for field compensation in wearable magnetoencephalography. Scientific Reports, 2019, 9, 14196.	1.6	72
57	Assessing interactions of linear and nonlinear neuronal sources using MEG beamformers: a proof of concept. Clinical Neurophysiology, 2005, 116, 1300-1313.	0.7	71
58	vmPFC Drives Hippocampal Processing during Autobiographical Memory Recall Regardless of Remoteness. Cerebral Cortex, 2020, 30, 5972-5987.	1.6	71
59	Modulation of alpha and gamma oscillations related to retrospectively orienting attention within working memory. European Journal of Neuroscience, 2014, 40, 2399-2405.	1.2	70
60	Flexible head-casts for high spatial precision MEG. Journal of Neuroscience Methods, 2017, 276, 38-45.	1.3	69
61	Discrimination of cortical laminae using MEG. NeuroImage, 2014, 102, 885-893.	2.1	65
62	Predictive Smooth Ocular Pursuit During the Transient Disappearance of a Visual Target. Journal of Neurophysiology, 2004, 92, 578-590.	0.9	64
63	The Frequency of Visually Induced Gamma-Band Oscillations Depends on the Size of Early Human Visual Cortex. Journal of Neuroscience, 2012, 32, 1507-1512.	1.7	64
64	Dynamic state allocation for MEG source reconstruction. NeuroImage, 2013, 77, 77-92.	2.1	64
65	Changes in the location of cortico-muscular coherence following stroke. NeuroImage: Clinical, 2013, 2, 50-55.	1.4	62
66	A brain basis for musical hallucinations. Cortex, 2014, 52, 86-97.	1.1	62
67	Practical constraints on estimation of source extent with MEG beamformers. NeuroImage, 2011, 54, 2732-2740.	2.1	59
68	Ventromedial prefrontal cortex drives hippocampal theta oscillations induced by mismatch computations. NeuroImage, 2015, 120, 362-370.	2.1	59
69	Dynamic causal modelling of lateral interactions in the visual cortex. NeuroImage, 2013, 66, 563-576.	2.1	58
70	Cognitive neuroscience using wearable magnetometer arrays: Non-invasive assessment of language function. NeuroImage, 2018, 181, 513-520.	2.1	56
71	Mouth magnetoencephalography: A unique perspective on the human hippocampus. NeuroImage, 2021, 225, 117443.	2.1	56
72	Temporal structure in associative retrieval. ELife, 2015, 4, .	2.8	56

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73	Population-level inferences for distributed MEG source localization under multiple constraints: Application to face-evoked fields. NeuroImage, 2007, 38, 422-438.	2.1	54
74	Hippocampal Theta-Phase Modulation of Replay Correlates with Configural-Relational Short-Term Memory Performance: Figure 1.. Journal of Neuroscience, 2011, 31, 7038-7042.	1.7	54
75	Imaging the human hippocampus with optically-pumped magnetoencephalography. NeuroImage, 2019, 203, 116192.	2.1	52
76	Stimuli of varying spatial scale induce gamma activity with distinct temporal characteristics in human visual cortex. NeuroImage, 2007, 35, 518-530.	2.1	49
77	A general linear model for MEG beamformer imaging. NeuroImage, 2004, 23, 936-946.	2.1	48
78	Early Visual Responses Predict Conscious Face Perception within and between Subjects during Binocular Rivalry. Journal of Cognitive Neuroscience, 2013, 25, 969-985.	1.1	48
79	Using OPMs to measure neural activity in standing, mobile participants. NeuroImage, 2021, 244, 118604.	2.1	48
80	Non-invasive laminar inference with MEG: Comparison of methods and source inversion algorithms. NeuroImage, 2018, 167, 372-383.	2.1	47
81	Laminar dynamics of high amplitude beta bursts in human motor cortex. NeuroImage, 2021, 242, 118479.	2.1	45
82	Lamina-specific cortical dynamics in human visual and sensorimotor cortices. ELife, 2018, 7, .	2.8	45
83	The Frontal Control of Stopping. Cerebral Cortex, 2015, 25, 4392-4406.	1.6	44
84	Spatio-temporal Imaging of Cortical Desynchronization in Migraine Visual Aura: A Magnetoencephalography Case Study. Headache, 2004, 44, 204-208.	1.8	43
85	Investigating spatial specificity and data averaging in MEG. NeuroImage, 2010, 49, 525-538.	2.1	43
86	Optically pumped magnetoencephalography in epilepsy. Annals of Clinical and Translational Neurology, 2020, 7, 397-401.	1.7	43
87	Using generative models to make probabilistic statements about hippocampal engagement in MEG. NeuroImage, 2017, 149, 468-482.	2.1	42
88	Neural Competitive Queuing of Ordinal Structure Underlies Skilled Sequential Action. Neuron, 2019, 101, 1166-1180.e3.	3.8	42
89	Reading therapy strengthens topâ€“down connectivity in patients with pure alexia. Brain, 2013, 136, 2579-2591.	3.7	41
90	The right hemisphere supports but does not replace left hemisphere auditory function in patients with persisting aphasia. Brain, 2013, 136, 1901-1912.	3.7	40

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91	Dissecting the Function of Hippocampal Oscillations in a Human Anxiety Model. Journal of Neuroscience, 2017, 37, 6869-6876.	1.7	39
92	Smooth ocular pursuit during the transient disappearance of an accelerating visual target: the role of reflexive and voluntary control. Experimental Brain Research, 2006, 175, 1-10.	0.7	36
93	Modelling optically pumped magnetometer interference in MEG as a spatially homogeneous magnetic field. NeuroImage, 2021, 244, 118484.	2.1	36
94	Interference suppression techniques for OPM-based MEG: Opportunities and challenges. NeuroImage, 2022, 247, 118834.	2.1	35
95	Accuracy and applications of group MEG studies using cortical source locations estimated from participants' scalp surfaces. Human Brain Mapping, 2003, 20, 142-147.	1.9	34
96	Distinct contrast response functions in striate and extra-striate regions of visual cortex revealed with magnetoencephalography (MEG). Clinical Neurophysiology, 2005, 116, 1716-1722.	0.7	33
97	The relationship between the visual evoked potential and the gamma band investigated by blind and semi-blind methods. NeuroImage, 2011, 56, 1059-1071.	2.1	33
98	Gamma band pitch responses in human auditory cortex measured with magnetoencephalography. NeuroImage, 2012, 59, 1904-1911.	2.1	32
99	A general Bayesian treatment for MEG source reconstruction incorporating lead field uncertainty. NeuroImage, 2012, 60, 1194-1204.	2.1	31
100	Using optically pumped magnetometers to measure magnetoencephalographic signals in the human cerebellum. Journal of Physiology, 2019, 597, 4309-4324.	1.3	31
101	Effective electromagnetic noise cancellation with beamformers and synthetic gradiometry in shielded and partly shielded environments. Journal of Neuroscience Methods, 2009, 178, 120-127.	1.3	30
102	Distinct MEG correlates of conscious experience, perceptual reversals and stabilization during binocular rivalry. NeuroImage, 2014, 100, 161-175.	2.1	29
103	Functional source separation applied to induced visual gamma activity. Human Brain Mapping, 2008, 29, 131-141.	1.9	28
104	Magnetic Field Mapping and Correction for Moving OP-MEG. IEEE Transactions on Biomedical Engineering, 2022, 69, 528-536.	2.5	26
105	Identifying spatially overlapping local cortical networks with MEG. Human Brain Mapping, 2010, 31, 1003-1016.	1.9	25
106	Induced Gamma activity in primary visual cortex is related to luminance and not color contrast: An MEG study. Journal of Vision, 2008, 8, 4.	0.1	24
107	The Role of Hippocampalâ€“Ventromedial Prefrontal Cortex Neural Dynamics in Building Mental Representations. Journal of Cognitive Neuroscience, 2021, 33, 89-103.	1.1	24
108	Estimation of functional connectivity from electromagnetic signals and the amount of empirical data required. Neuroscience Letters, 2012, 513, 57-61.	1.0	23

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109	Structure predicts function: Combining non-invasive electrophysiology with in-vivo histology. NeuroImage, 2015, 108, 377-385.	2.1	23
110	Pragmatic spatial sampling for wearable MEG arrays. Scientific Reports, 2020, 10, 21609.	1.6	23
111	Predicting the duration of ocular pursuit in humans. Experimental Brain Research, 2005, 160, 10-21.	0.7	22
112	Resting state MEG oscillations show long-range temporal correlations of phase synchrony that break down during finger movement. Frontiers in Physiology, 2015, 6, 183.	1.3	22
113	The occluded onset pursuit paradigm: prolonging anticipatory smooth pursuit in the absence of visual feedback. Experimental Brain Research, 2006, 175, 11-20.	0.7	21
114	Quantitative differences in smooth pursuit and saccadic eye movements. Experimental Brain Research, 2006, 175, 596-608.	0.7	20
115	Controlling false positive rates in mass-multivariate tests for electromagnetic responses. NeuroImage, 2011, 56, 1072-1081.	2.1	20
116	Spherical harmonic based noise rejection and neuronal sampling with multi-axis OPMs. NeuroImage, 2022, 258, 119338.	2.1	20
117	Imaging the dynamics of the auditory steady-state evoked response. Neuroscience Letters, 2005, 385, 195-197.	1.0	19
118	The spatial distribution and temporal dynamics of brain regions activated during the perception of object and non-object patterns. NeuroImage, 2007, 34, 371-383.	2.1	19
119	Highâ€precision magnetoencephalography for reconstructing amygdalar and hippocampal oscillations during prediction of safety and threat. Human Brain Mapping, 2019, 40, 4114-4129.	1.9	19
120	Attention and selection for predictive smooth pursuit eye movements. Cognitive Brain Research, 2005, 25, 688-700.	3.3	18
121	Whole-Brain Neural Dynamics of Probabilistic Reward Prediction. Journal of Neuroscience, 2017, 37, 3789-3798.	1.7	18
122	Can we observe collective neuronal activity from macroscopic aggregate signals?. NeuroImage, 2009, 44, 1290-1303.	2.1	16
123	Dataâ€driven model optimization for optically pumped magnetometer sensor arrays. Human Brain Mapping, 2019, 40, 4357-4369.	1.9	16
124	Topographic mapping of the pattern onset evoked magnetic response to stimulation of different portions of the visual field. International Journal of Psychophysiology, 1994, 16, 175-183.	0.5	15
125	Anticipatory VOR Suppression Induced by Visual and Nonvisual Stimuli in Humans. Journal of Neurophysiology, 2004, 92, 1501-1511.	0.9	14
126	Retinotopic mapping of the primary visual cortex - a challenge for MEG imaging of the human cortex. European Journal of Neuroscience, 2011, 34, 652-661.	1.2	14

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127	How many positions can we perceptually encode, one or many?. Vision Research, 2003, 43, 1575-1587.	0.7	13
128	Anticipatory eye movements evoked after active following versus passive observation of a predictable motion stimulus. Brain Research, 2008, 1245, 74-81.	1.1	13
129	Quantifying the performance of MEG source reconstruction using resting state data. NeuroImage, 2018, 181, 453-460.	2.1	13
130	A verifiable solution to the MEG inverse problem. NeuroImage, 2006, 31, 623-626.	2.1	12
131	Representation of probabilistic outcomes during risky decision-making. Nature Communications, 2020, 11, 2419.	5.8	12
132	Magnetoencephalographic Correlates of Perceptual State During Auditory Bistability. Scientific Reports, 2018, 8, 976.	1.6	11
133	Estimates of cortical column orientation improve MEG source inversion. NeuroImage, 2020, 216, 116862.	2.1	11
134	Working Memory Replay Prioritizes Weakly Attended Events. ENeuro, 2017, 4, ENEURO.0171-17.2017.	0.9	11
135	Abnormality of mismatch negativity in response to tone omission in dyslexic adults. Brain Research, 2006, 1077, 90-98.	1.1	8
136	Optimising beamformer regions of interest analysis. NeuroImage, 2014, 102, 945-954.	2.1	8
137	Between Thought and Expression, a Magnetoencephalography Study of the â€œTip-of-the-Tongueâ€• Phenomenon. Journal of Cognitive Neuroscience, 2014, 26, 2210-2223.	1.1	8
138	Does function fit structure? A ground truth for non-invasive neuroimaging. NeuroImage, 2014, 94, 89-95.	2.1	8
139	Sustained Magnetic Responses in Temporal Cortex Reflect Instantaneous Significance of Approaching and Receding Sounds. PLoS ONE, 2015, 10, e0134060.	1.1	8
140	Neuromagnetic effects of pico-Tesla stimulation. Physiological Measurement, 2015, 36, 1901-1912.	1.2	8
141	Testing covariance models for MEG source reconstruction of hippocampal activity. Scientific Reports, 2021, 11, 17615.	1.6	8
142	Cortical surface reconstruction based on MEG data and spherical harmonics. , 2013, 2013, 6449-52.		7
143	Population Level Inference for Multivariate MEG Analysis. PLoS ONE, 2013, 8, e71305.	1.1	7
144	Non-linear Parameter Estimates from Non-stationary MEG Data. Frontiers in Neuroscience, 2016, 10, 366.	1.4	7

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145	The chronometry of risk processing in the human cortex. Frontiers in Neuroscience, 2013, 7, 146.	1.4	6
146	Magnetoencephalographic Activity Related to Conscious Perception Is Stable within Individuals across Years but Not between Individuals. Journal of Cognitive Neuroscience, 2014, 26, 840-853.	1.1	6
147	Gamma Frequency and the Spatial Tuning of Primary Visual Cortex. PLoS ONE, 2016, 11, e0157374.	1.1	6
148	Cortical Spreading Depression Is Neuroprotective: The Challenge of Basic Sciences. Headache, 2005, 45, 177-178.	1.8	5
149	Reconstructing anatomy from electro-physiological data. NeuroImage, 2017, 163, 480-486.	2.1	5
150	Updating Dynamic Noise Models With Moving Magnetoencephalographic (MEG) Systems. IEEE Access, 2019, 7, 10093-10102.	2.6	5
151	The Effect of Object Type on Building Scene Imageryâ€"an MEG Study. Frontiers in Human Neuroscience, 2020, 14, 592175.	1.0	5
152	Random location of multiple sparse priors for solving the MEG/EEG inverse problem. , 2012, 2012, 1534-7.		4
153	A Peak-Clustering Method for MEG Group Analysis to Minimise Artefacts Due to Smoothness. PLoS ONE, 2012, 7, e45084.	1.1	4
154	The spatial relationship between event-related changes in cortical synchrony, and the haemodynamic response: an MEG-fMRI study. NeuroImage, 2001, 13, 71.	2.1	3
155	Neuromagnetic correlates of the fMRI BOLD response. International Congress Series, 2007, 1300, 325-328.	0.2	3
156	MEG evidence that the central auditory system simultaneously encodes multiple temporal cues. European Journal of Neuroscience, 2009, 30, 1183-1191.	1.2	3
157	NEURAL BASES OF MUSICAL HALLUCINATIONS. Journal of Neurology, Neurosurgery and Psychiatry, 2014, 85, e3-e3.	0.9	3
158	Quantification of the relationship between magnetoencephalographic (MEG) and blood oxygenation dependent (BOLD) images of brain function. , 0, , .		2
159	Can you tell your clunis from your cubitus? A benchmark for functional imaging. BMJ: British Medical Journal, 2004, 329, 1492.2-1493.	2.4	2
160	Set-level threshold-free tests on the intrinsic volumes of SPMs. NeuroImage, 2013, 68, 133-140.	2.1	1
161	Cortical Spreading Depression Is Neuroprotective: The Challenge of Basic Sciences-A Response. Headache, 2005, 45, 178-178.	1.8	0
162	Simultaneous estimation of brain structure and function with MEG/EEG data. , 2017, , .		0

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163	Reply to â€œClinical practice guidelines or clinical research guidelines?â€• Clinical Neurophysiology, 2018, 129, 2056-2057.	0.7	0
164	Watching Movies Unfold, a Frame-by-Frame Analysis of the Associated Neural Dynamics. ENeuro, 2021, 8, ENEURO.0099-21.2021.	0.9	0