

# Roberto Merletti

## List of Publications by Citations

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116  
papers

6,577  
citations

43  
h-index

80  
g-index

121  
ext. papers

7,467  
ext. citations

3.1  
avg. IF

5.86  
L-index

#	Paper	IF	Citations
116	The extraction of neural strategies from the surface EMG. <i>Journal of Applied Physiology</i> , <b>2004</b> , 96, 1486-957	3.7	988
115	Influence of amplitude cancellation on the simulated surface electromyogram. <i>Journal of Applied Physiology</i> , <b>2005</b> , 98, 120-31	3.7	287
114	The extraction of neural strategies from the surface EMG: an update. <i>Journal of Applied Physiology</i> , <b>2014</b> , 117, 1215-30	3.7	252
113	Influence of anatomical, physical, and detection-system parameters on surface EMG. <i>Biological Cybernetics</i> , <b>2002</b> , 86, 445-56	2.8	246
112	Surface myoelectric signal cross-talk among muscles of the leg. <i>Electroencephalography and Clinical Neurophysiology</i> , <b>1988</b> , 69, 568-75		244
111	Technology and instrumentation for detection and conditioning of the surface electromyographic signal: state of the art. <i>Clinical Biomechanics</i> , <b>2009</b> , 24, 122-34	2.2	229
110	Decoding the neural drive to muscles from the surface electromyogram. <i>Clinical Neurophysiology</i> , <b>2010</b> , 121, 1616-23	4.3	216
109	The linear electrode array: a useful tool with many applications. <i>Journal of Electromyography and Kinesiology</i> , <b>2003</b> , 13, 37-47	2.5	204
108	Analysis of motor units with high-density surface electromyography. <i>Journal of Electromyography and Kinesiology</i> , <b>2008</b> , 18, 879-90	2.5	191
107	Estimating motor unit discharge patterns from high-density surface electromyogram. <i>Clinical Neurophysiology</i> , <b>2009</b> , 120, 551-62	4.3	171
106	A surface EMG generation model with multilayer cylindrical description of the volume conductor. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2004</b> , 51, 415-26	5	154
105	Atlas of Muscle Innervation Zones <b>2012</b> ,		153
104	Surface EMG crosstalk between knee extensor muscles: experimental and model results. <i>Muscle and Nerve</i> , <b>2002</b> , 26, 681-95	3.4	141
103	Effect of age on muscle functions investigated with surface electromyography. <i>Muscle and Nerve</i> , <b>2002</b> , 25, 65-76	3.4	128
102	A new method for the extraction and classification of single motor unit action potentials from surface EMG signals. <i>Journal of Neuroscience Methods</i> , <b>2004</b> , 136, 165-77	3	125
101	Standardising surface electromyogram recordings for assessment of activity and fatigue in the human upper trapezius muscle. <i>European Journal of Applied Physiology</i> , <b>2002</b> , 86, 469-78	3.4	118
100	Myoelectric and mechanical manifestations of muscle fatigue in voluntary contractions. <i>Journal of Orthopaedic and Sports Physical Therapy</i> , <b>1996</b> , 24, 342-53	4.2	117

99	Median frequency of the myoelectric signal. Effects of muscle ischemia and cooling. <i>European Journal of Applied Physiology and Occupational Physiology</i> , <b>1984</b> , 52, 258-65		116
98	Assessment of single motor unit conduction velocity during sustained contractions of the tibialis anterior muscle with advanced spike triggered averaging. <i>Journal of Neuroscience Methods</i> , <b>2002</b> , 115, 1-12	3	113
97	Advances in surface EMG: recent progress in detection and processing techniques. <i>Critical Reviews in Biomedical Engineering</i> , <b>2010</b> , 38, 305-45	1.1	106
96	Assessment of force and fatigue in isometric contractions of the upper trapezius muscle by surface EMG signal and perceived exertion scale. <i>Gait and Posture</i> , <b>2008</b> , 28, 179-86	2.6	101
95	Assessment of average muscle fiber conduction velocity from surface EMG signals during fatiguing dynamic contractions. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2004</b> , 51, 1383-93	5	100
94	Postural activation of the human medial gastrocnemius muscle: are the muscle units spatially localised?. <i>Journal of Physiology</i> , <b>2011</b> , 589, 431-43	3.9	83
93	Advances in surface EMG: recent progress in clinical research applications. <i>Critical Reviews in Biomedical Engineering</i> , <b>2010</b> , 38, 347-79	1.1	71
92	Analysis of intramuscular electromyogram signals. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , <b>2009</b> , 367, 357-68	3	71
91	Automatic segmentation of surface EMG images: Improving the estimation of neuromuscular activity. <i>Journal of Biomechanics</i> , <b>2010</b> , 43, 2149-58	2.9	71
90	Upper trapezius muscle mechanomyographic and electromyographic activity in humans during low force fatiguing and non-fatiguing contractions. <i>European Journal of Applied Physiology</i> , <b>2002</b> , 87, 327-36	3.4	71
89	Influence of motor unit properties on the size of the simulated evoked surface EMG potential. <i>Experimental Brain Research</i> , <b>2006</b> , 169, 37-49	2.3	66
88	Consensus for experimental design in electromyography (CEDE) project: Amplitude normalization matrix. <i>Journal of Electromyography and Kinesiology</i> , <b>2020</b> , 53, 102438	2.5	64
87	Insights gained into the interpretation of surface electromyograms from the gastrocnemius muscles: A simulation study. <i>Journal of Biomechanics</i> , <b>2011</b> , 44, 1096-103	2.9	64
86	Multichannel surface EMG for the non-invasive assessment of the anal sphincter muscle. <i>Digestion</i> , <b>2004</b> , 69, 112-22	3.6	63
85	Examination of Poststroke Alteration in Motor Unit Firing Behavior Using High-Density Surface EMG Decomposition. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2015</b> , 62, 1242-52	5	62
84	Blind separation of linear instantaneous mixtures of nonstationary surface myoelectric signals. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2004</b> , 51, 1555-67	5	62
83	A bi-dimensional index for the selective assessment of myoelectric manifestations of peripheral and central muscle fatigue. <i>Journal of Electromyography and Kinesiology</i> , <b>2009</b> , 19, 851-63	2.5	60
82	Adjustments differ among low-threshold motor units during intermittent, isometric contractions. <i>Journal of Neurophysiology</i> , <b>2009</b> , 101, 350-9	3.2	51

81	Evaluation of intra-muscular EMG signal decomposition algorithms. <i>Journal of Electromyography and Kinesiology</i> , <b>2001</b> , 11, 175-87	2.5	51
80	A novel approach for estimating muscle fiber conduction velocity by spatial and temporal filtering of surface EMG signals. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2003</b> , 50, 1340-51	5	50
79	Selectivity of spatial filters for surface EMG detection from the tibialis anterior muscle. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2003</b> , 50, 354-64	5	49
78	Estimation of average muscle fiber conduction velocity from two-dimensional surface EMG recordings. <i>Journal of Neuroscience Methods</i> , <b>2004</b> , 134, 199-208	3	47
77	Recruitment of motor units in the medial gastrocnemius muscle during human quiet standing: is recruitment intermittent? What triggers recruitment?. <i>Journal of Neurophysiology</i> , <b>2012</b> , 107, 666-76	3.2	44
76	M-wave properties during progressive motor unit activation by transcutaneous stimulation. <i>Journal of Applied Physiology</i> , <b>2004</b> , 97, 545-55	3.7	44
75	Surface EMG in Clinical Assessment and Neurorehabilitation: Barriers Limiting Its Use. <i>Frontiers in Neurology</i> , <b>2020</b> , 11, 934	4.1	44
74	Consensus for experimental design in electromyography (CEDE) project: Electrode selection matrix. <i>Journal of Electromyography and Kinesiology</i> , <b>2019</b> , 48, 128-144	2.5	43
73	Spatial EMG potential distribution pattern of vastus lateralis muscle during isometric knee extension in young and elderly men. <i>Journal of Electromyography and Kinesiology</i> , <b>2012</b> , 22, 74-9	2.5	40
72	Motor unit firing pattern of vastus lateralis muscle in type 2 diabetes mellitus patients. <i>Muscle and Nerve</i> , <b>2013</b> , 48, 806-13	3.4	37
71	Effect of side dominance on myoelectric manifestations of muscle fatigue in the human upper trapezius muscle. <i>European Journal of Applied Physiology</i> , <b>2003</b> , 90, 480-8	3.4	37
70	Outlier detection in high-density surface electromyographic signals. <i>Medical and Biological Engineering and Computing</i> , <b>2012</b> , 50, 79-89	3.1	36
69	Is the stabilization of quiet upright stance in humans driven by synchronized modulations of the activity of medial and lateral gastrocnemius muscles?. <i>Journal of Applied Physiology</i> , <b>2010</b> , 108, 85-97	3.7	36
68	Reproducibility of muscle-fiber conduction velocity estimates using multichannel surface EMG techniques. <i>Muscle and Nerve</i> , <b>2004</b> , 29, 282-91	3.4	35
67	Effect of vaginal delivery on the external anal sphincter muscle innervation pattern evaluated by multichannel surface EMG: results of the multicentre study TASI-2. <i>International Urogynecology Journal</i> , <b>2014</b> , 25, 1491-9	2	32
66	Uneven spatial distribution of surface EMG: what does it mean?. <i>European Journal of Applied Physiology</i> , <b>2013</b> , 113, 887-94	3.4	32
65	Time-frequency analysis and estimation of muscle fiber conduction velocity from surface EMG signals during explosive dynamic contractions. <i>Journal of Neuroscience Methods</i> , <b>2005</b> , 142, 267-74	3	31
64	Automatic detection of motor unit innervation zones of the external anal sphincter by multichannel surface EMG. <i>Journal of Electromyography and Kinesiology</i> , <b>2014</b> , 24, 860-7	2.5	26

63	Reliability of a novel neurostimulation method to study involuntary muscle phenomena. <i>Muscle and Nerve</i> , <b>2008</b> , 37, 90-100	3.4	26
62	Reliability of surface EMG matrix in locating the innervation zone of upper trapezius muscle. <i>Journal of Electromyography and Kinesiology</i> , <b>2011</b> , 21, 827-33	2.5	22
61	Basic Physiology and Biophysics of EMG Signal Generation <b>2005</b> , 1-25		22
60	Design of a portable, intrinsically safe multichannel acquisition system for high-resolution, real-time processing HD-sEMG. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2013</b> , 60, 2242-52	5	20
59	Automatic localisation of innervation zones: a simulation study of the external anal sphincter. <i>Journal of Electromyography and Kinesiology</i> , <b>2009</b> , 19, e413-21	2.5	20
58	Repeatability of innervation zone identification in the external anal sphincter muscle. <i>Neurourology and Urodynamics</i> , <b>2010</b> , 29, 449-57	2.3	18
57	Characterization of the motor units of the external anal sphincter in pregnant women with multichannel surface EMG. <i>International Urogynecology Journal</i> , <b>2014</b> , 25, 1097-103	2	17
56	Effect of electrode array position and subcutaneous tissue thickness on conduction velocity estimation in upper trapezius muscle. <i>Journal of Electromyography and Kinesiology</i> , <b>2008</b> , 18, 628-36	2.5	17
55	Detection and Conditioning of the Surface EMG Signal <b>2005</b> , 107-131		17
54	Biophysics of the Generation of EMG Signals <b>2005</b> , 81-105		16
53	Myoelectric manifestations of fatigue during exposure to hypobaric hypoxia for 12 days. <i>Muscle and Nerve</i> , <b>2004</b> , 30, 618-25	3.4	16
52	Do surface electromyograms provide physiological estimates of conduction velocity from the medial gastrocnemius muscle?. <i>Journal of Electromyography and Kinesiology</i> , <b>2013</b> , 23, 319-25	2.5	15
51	Spatial distribution of surface EMG on trapezius and lumbar muscles of violin and cello players in single note playing. <i>Journal of Electromyography and Kinesiology</i> , <b>2016</b> , 31, 144-153	2.5	13
50	Reply to De Luca, Nawab, and Kline: The proposed method to validate surface EMG signal decomposition remains problematic. <i>Journal of Applied Physiology</i> , <b>2015</b> , 118, 1085	3.7	12
49	Myoelectric Manifestations of Muscle Fatigue <b>2005</b> , 233-258		12
48	Applications in Ergonomics <b>2005</b> , 343-363		12
47	Multi-channel electromyography during maximal isometric and dynamic contractions. <i>Journal of Electromyography and Kinesiology</i> , <b>2013</b> , 23, 302-10	2.5	11
46	Compression of multidimensional biomedical signals with spatial and temporal codebook-excited linear prediction. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2009</b> , 56, 2604-10	5	11

45	Detection of individual motor units of the puborectalis muscle by non-invasive EMG electrode arrays. <i>Journal of Electromyography and Kinesiology</i> , <b>2008</b> , 18, 382-9	2.5	11
44	Control of Powered Upper Limb Protheses <b>2005</b> , 453-475		11
43	Solving EMG-force relationship using Particle Swarm Optimization. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2011</b> , 2011, 3861-4	0.9	10
42	Needle and Wire Detection Techniques <b>2005</b> , 27-46		9
41	Separation of propagating and non propagating components in surface EMG. <i>Biomedical Signal Processing and Control</i> , <b>2008</b> , 3, 126-137	4.9	8
40	Consensus for experimental design in electromyography (CEDE) project: Terminology matrix. <i>Journal of Electromyography and Kinesiology</i> , <b>2021</b> , 59, 102565	2.5	8
39	Detection and Conditioning of Surface EMG Signals <b>2016</b> , 1-37		7
38	Compression of high-density EMG signals for trapezius and gastrocnemius muscles. <i>BioMedical Engineering OnLine</i> , <b>2014</b> , 13, 25	4.1	7
37	Surface EMG in Ergonomics and Occupational Medicine <b>2016</b> , 361-391		5
36	Techniques for Information Extraction from the Surface EMG Signalhigh-Density Surface EMG <b>2016</b> , 126-157		5
35	Surface electromyography features in manual workers affected by carpal tunnel syndrome. <i>Muscle and Nerve</i> , <b>2012</b> , 45, 873-82	3.4	5
34	Spinal involvement and muscle cramps in electrically elicited muscle contractions. <i>Artificial Organs</i> , <b>2011</b> , 35, 221-5	2.6	5
33	Single-Channel Techniques for Information Extraction from the Surface EMG Signal <b>2005</b> , 133-168		5
32	EMG Modeling and Simulation <b>2005</b> , 205-231		5
31	Comparison of chairs based on HDsEMG of back muscles, biomechanical and comfort indices, for violin and viola players: A short-term study. <i>Journal of Electromyography and Kinesiology</i> , <b>2018</b> , 42, 92-103 <sup>5</sup>		5
30	EMG in Exercise Physiology and Sports <b>2016</b> , 501-539		4
29	Advanced Signal Processing Techniques <b>2005</b> , 259-304		4
28	Consensus for experimental design in electromyography (CEDE) project: High-density surface electromyography matrix.. <i>Journal of Electromyography and Kinesiology</i> , <b>2022</b> , 64, 102656	2.5	4

27	Fundamental Concepts of Bipolar and High-Density Surface EMG Understanding and Teaching for Clinical, Occupational, and Sport Applications: Origin, Detection, and Main Errors. <i>Sensors</i> , <b>2022</b> , 22, 4150 <sup>3.8</sup>	4
26	Analysis of High-Density Surface EMG and Finger Pressure in the Left Forearm of Violin Players: A Feasibility Study. <i>Medical Problems of Performing Artists</i> , <b>2017</b> , 32, 139-151	0.6 3
25	EMG of Electrically Stimulated Muscles <b>2016</b> , 311-332	3
24	High-density surface electromyography signals during isometric contractions of elbow muscles of healthy humans. <i>Scientific Data</i> , <b>2020</b> , 7, 397	8.2 3
23	Surface Electromyography (sEMG) <b>2018</b> , 1-22	3
22	Surface EMG Decomposition <b>2016</b> , 180-209	2
21	Pelvic Floor EMG: Principles, Techniques, and Applications <b>2016</b> , 83-99	2
20	Decomposition of Intramuscular EMG Signals <b>2005</b> , 47-80	2
19	Surface Mechanomyogram <b>2005</b> , 305-322	2
18	Biofeedback Applications <b>2005</b> , 435-451	2
17	Size and X-ray density of normal and denervated muscles of the human leg and forearm. <i>International Rehabilitation Medicine</i> , <b>1986</b> , 8, 82-9	2
16	Monitoring Involuntary Muscle Activity in Acute Patients with Upper Motor Neuron Lesion by Wearable Sensors: A Feasibility Study. <i>Sensors</i> , <b>2021</b> , 21,	3.8 2
15	Applications in Proctology and Obstetrics <b>2016</b> , 392-407	1
14	The correct episiotomy: Does it exist?. <i>International Urogynecology Journal</i> , <b>2016</b> , 27, 161-2	2 1
13	Multi-Channel Techniques for Information Extraction from the Surface EMG <b>2005</b> , 169-203	1
12	Surface EMG Applications in Neurology <b>2005</b> , 323-342	1
11	Applications in Movement and Gait Analysis <b>2005</b> , 381-401	1
10	High Density Surface Electromyography Activity of the Lumbar Erector Spinae Muscles and Comfort/Discomfort Assessment in Piano Players: Comparison of Two Chairs.. <i>Frontiers in Physiology</i> , <b>2021</b> , 12, 743730	4.6 0

- 9 EMG and Posture in Its Narrowest Sense **2016**, 408-439
- 8 Mathematical Techniques for Noninvasive Muscle Signal Analysis and Interpretation **2019**, 95-111
- 7 Surface Electromyogram Detection **2013**, 113-136
- 6 Applications of sEMG in Dynamic Conditions, Ergonomics, Sports, and Obstetrics **2012**, 71-79
- 5 Features of the Two-Dimensional sEMG Signal: EMG Feature Imaging **2012**, 61-69
- 4 EMG Imaging: Geometry and Anatomy of the Electrode-Muscle System **2012**, 39-47
- 3 Motor units in cranial and caudal regions of the upper trapezius muscle have different discharge rates during brief static contractions. *Acta Physiologica*, **2008**, 192, 453 5.6
- 2 Applications in Exercise Physiology **2005**, 365-379
- 1 Applications in Rehabilitation Medicine and Related Fields **2005**, 403-433