

Curriculum Vitae

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Personal Data

Name: Sophia Erimaki
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Current position: Teaching assistant in Physiology
Medical School, University of Crete

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EDUCATION

2000-2005 Ph.D, Interdisciplinary Program 'Brain and Mind' , Medical School, University of Crete
2000-2004 Residency in Neurology, University Hospital of Heraklion, Crete, Greece
1998-1999 Residency in Psychiatry, University Hospital of Heraklion,
Crete, Greece
1997-1998 Residency in Internal Medicine, Venizelio General Hospital, Heraklion, Crete, Greece
1995-1997 MSc in Neurosciences, Medical School, University of Crete
1988-1994 MD, University of Crete (with distinction)

AWARDS

1998 Hellenic Society for Neuroscience
1997 Hellenic Society for Neuroscience
1988-1993 Merit scholarships (annual), State Scholarships Foundation (IKY), Greece

SOCIETY MEMBERSHIPS

European Neurological Society
Society for Neuroscience USA
Federation of European Neuroscience Association
Hellenic Society for Neuroscience

RESEARCH EXPERIENCE

- 2005- Post doctoral research associate, Lab of Systems Physiology and Computational Neuroscience (advisor: Prof. C. N. Christakos)
- 2005- Collaborative researcher, Institute of Applied and Computational Mathematics, Foundation for Research and Technology, Heraklion Crete, Greece
- 2004-2005 Research associate, Lab of Electroencephalography (advisor: Prof. S. Micheloyannis),

RESEARCH INTERESTS

Development of computational techniques to study correlated rhythms in neural populations
Mechanisms of generation of physiological and pathological tremors (e.g Parkinson's disease)
Mechanisms of production of time varying forces
Role of tremor in rhythmical motor control
Functional brain organization and network synchrony in health and disease

GRANT SUPPORT

PYTHAGORAS II (post-doctoral research associate, advisor Assoc. Prof. C.N. Christakos)
BIOPATTERN-Network of Excellence (advisor: Assoc. Prof. S. Micheloyannis)
BIOTECH ERB BIO4 CT98-0546
PENED 95ED1254

PEER REVIEW

Brain Research Bulletin

TEACHING EXPERIENCE

A. Undergraduate teaching

2005- Teaching assistant in Physiology: Physiology A (autonomic nervous system), Physiology B (clinically based problems in respiratory and renal systems), Physiology C (cardiac physiology, basic principles and interpretation of electrocardiogram), Medical School, University of Crete.

B. Post-graduate teaching

2005-2006 Teaching assistant, in the course 'Signals and Systems' Interdisciplinary postgraduate program 'Brain and Mind' (funded by PYTHAGORAS II)

TECHNICAL SKILLS

Good knowledge of Matlab (incl. several toolboxes) and Labview (I have developed the software for recordings and analysis for the Lab of Systems Physiology and Computational Neuroscience)

Proficient in statistical analysis (using SPSS)

PUBLICATIONS

(A) PhD Thesis

«Study of motor unit activities in hand muscles with emphasis on the analysis of synchrony», 2005.

(B) Scientific papers

- **Erimaki S**, Agapaki O, Christakos CN. Motor unit firing modulation during sinusoidal and complex tasks (in preparation).
1. Tsirka V, Simos PG, Vakis A, Kanatsouli K, Vourkas M, **Erimaki S**, Pachou E, Stam CJ, Micheloyannis S. Mild traumatic brain injury: Graph theoretical characterization of brain networks for episodic memory. **Int J Psychophysiol**, 2010 Sep 20. doi:10.1016/j.ijpsycho.2010.09.006 [Epub ahead of print] (Impact Factor: **3.045**, 5-year Impact Factor: **3.314**).
 2. Christakos CN, **Erimaki S**, Anagnostou E, Anastasopoulos D. Tremor-related motor unit firing in Parkinson's disease: implications for tremor genesis. **J. Physiol.-London** 2009; 587: 4811-4827 (Impact Factor: **4.764**, 5-year Impact Factor: **4.793**, Times cited: **1**).
 3. **Erimaki S**, Christakos CN. Coherent motor unit rhythms in the 6-10 Hz range during time-varying voluntary muscle contractions: neural mechanism and relation to rhythmical motor control. **J. Neurophysiol.** 2008; 99: 473-483 (Impact Factor: **3.483**, 5-year Impact Factor: **3.872**, Times cited: **5**).
 4. Micheloyannis S, Pachou E, Stam CJ, Breakspear M, Bitsios P, Vourkas M, **Erimaki S**, Zervakis M. Small-world networks and disturbed functional connectivity in schizophrenia. **Schizophr. Res.** 2006; 87: 60-66 (Impact Factor: **4.458**, 5-year Impact Factor: **4.945**, Times cited: **60**).
 5. Micheloyannis S, Pachou E, Stam CJ, Vourkas M, **Erimaki S**, Tsirka V. Using graph theoretical analysis of multi channel EEG to evaluate the neural efficiency hypothesis. **Neurosci. Lett.** 2006; 402: 273-277 (Impact Factor: **1.925**, 5-year Impact Factor: **2.114**, Times cited: **57**).
 6. Christakos CN, Papadimitriou N, **Erimaki S**. Parallel neuronal mechanisms underlying physiological force tremor in steady muscle contractions of humans. **J. Neurophysiol.** 2006; 95: 53-66 (Impact Factor: **3.483**, 5-year Impact Factor: **3.872**, Times cited: **17**).

7. **Erimaki S**, Christakos CN. Occurrence of widespread motor-unit firing correlations in muscle contractions: Their role in the generation of tremor and time-varying voluntary force. **J. Neurophysiol.** 1999; 82: 2839-46 (Impact Factor: **3.483**, 5-year Impact Factor: **3.872**, Times cited: **17**).

(C) Proceedings

1. Righi M, Starita A, Barcaro U, **Erimaki S**, Micheloyannis S. A method for detection of transient events in EEG signals. BIOPATTERN Brain Workshop 2006; pp 15-16.
2. Pachou E, Oikonomou T, Sakkalis V, **Erimaki S.**, Tsirka V, Tolis Y, Zervakis M, Micheloyannis S. Using graph theoretical methods to evaluate EEG signals in schizophrenia. BIOPATTERN Brain Workshop 2006; p 23.
3. Sakkalis V, Zervakis M, **Erimaki S**, Micheloyannis S. Evaluation of electroencephalographic activity involved in mathematical thinking using wavelet analysis and significance-based features. Proceedings of the 2nd International Conference on Computational Intelligence in Medicine and Healthcare 2005; pp 163-168.
4. Erimakis GM, Papadourakis GM, Koukoumas N, **Erimaki S**. Evaluation of technology in health care: The case of integrated medical imaging. Medical Informatics Europe, Copenhagen, Denmark, 1996.

(D) Abstracts

1. **Erimaki S**, Papadaki E, Tzagournissakis M, Plaitakis A. Occurrence of capillary telangiectasia, cavernous angioma and developmental venous anomaly (venous angioma) in a single patient. *J. Neurol.* 2008; 255 suppl.2: 192.
2. **Erimaki S**, Anagnostou E, Anastasopoulos D, Christakos CN. Motor unit firing properties and rhythmical correlations in parkinsonian postural tremor. *J Neurol* 2007; 254 suppl.3: 64.
3. **Erimaki S**, Christakos CN. Study of 15-30 Hz motor unit firing synchrony in steady and slowly-varying muscle contractions. Society for Neuroscience, Atlanta, 2006a.
4. Christakos CN, Plumis N, **Erimaki S**. Synchronized 6-12 Hz motor unit rhythms in steady and slowly-varying muscle contractions: underlying mechanism and implications for motor control. Society for Neuroscience, Atlanta, 2006b.

5. **Erimaki S**, Christakos CN. Fast motor unit firing rhythms and synchrony in steady and slowly-varying muscle contractions. 20th Meeting of the Hellenic Society for Neuroscience, Heraklion Crete, 2006a.
6. Micheloyannis S, Vourkas M, Zervakis M, Tsirka V, **Erimaki S**, Vanrumste B. Graph-theoretical analysis of epileptic EEG activity. 20th Meeting of the Hellenic Society for Neuroscience, Heraklion Crete, 2006b.
7. Karakonstandaki ES, Voutoufianakis S, Kanatsouli KS, Tsirka V, Linardakis M, **Erimaki S**, Micheloyannis S. Controlled childhood epilepsy does not impair school performance and behavior. Second Aegean Meeting on Neurologic Therapeutics, Heraklion Crete, Greece, 2006.
8. Tzagournissakis M, **Erimaki S**, Amoiridis G, Plaitakis A. Immunosuppressive treatment of myasthenia gravis: a 10-year experience. Second Aegean Meeting on Neurologic Therapeutics, Heraklion Crete, Greece, 2006
9. **Erimaki S**, Kanatsouli K, Karakonstandaki E, Vourkas M, Sakkalis V, Micheloyannis S. EEG responses to complex fractal stimuli. International Nonlinear Sciences Conference, Heraklion Crete Greece, 2006.
10. **Erimaki S**, Anagnostou E, Anastasopoulos D, Christakos CN. Pathological tremors and motor unit firing synchrony. 19th Meeting of the Hellenic Society for Neuroscience, Patras, 2005.
11. **Erimaki S**, Tzagournissakis M, Plaitakis A. Intravenous heparin remains the treatment of choice in cerebral venous thrombosis. First Aegean Meeting on Neurologic Therapeutics, Heraklion Crete, Greece, 2004.
12. **Erimaki S**, Tzagournissakis M, Plaitakis A. A combined approach to the treatment of cerebral brain abscesses due to *Listeria Monocytogenes*. First Aegean Meeting on Neurologic Therapeutics, Heraklion Crete, Greece, 2004.
13. **Erimaki S**, Tzagournissakis M, Fragos K, Karampekios S, Plumis N, Plaitakis A. MRI findings in a case of listerial brain abscess, *J. Neurol.* 2004; 251 suppl. 3: 158.
14. Tzagournissakis M, Prokopakis E, Cheimona T, **Erimaki S**, Velegarakis G. Canalith Repositioning Procedure is an effective treatment for Benign Paroxysmal Positional Vertigo: Long-term results in 460 patients. *Neurology* 2004; 62 Suppl. 5: 65.

15. Papadimitriou N, **Erimaki S**, Plumis N, Christakos CN. Motor unit firing rhythmicity and spinal stretch reflex oscillations as the two parallel mechanisms of physiological force tremor. Society for Neuroscience, New Orleans, 2003.
16. Christakos CN, **Erimaki S**, Moschovakis AK. Complicating factors in the analysis of neural population synchrony and in understanding the formation of aggregate rhythms: application to tremor genesis. Society for Neuroscience, New Orleans, 2003.
17. **Erimaki S**, Anastasopoulos D, Papadimitriou N, Christakos CN. Study of motor unit firing behavior and synchrony in movement disorders with emphasis on pathological muscle tremors. 18th Annual Meeting of the Hellenic Soc. Neurosci., Athens, Greece, 2003.
18. **Erimaki S**, Tzagournisakis M, Mavridis M, Pagonidis K, Papakonstantinou O, Plaitakis A. Cerebral venous thrombosis diagnosis and management: a 5-year experience. *J. Neurol.* 2003; 250 suppl. 2: 184.
19. Pagonidis K, Papakonstantinou O, Karampekios S, Fragos K, **Erimaki S**, Prassopoulos P, Gourtsoyiannis N. Dural sinus thrombosis: spectrum of MR imaging and MR angiographic findings. European Congress of Radiology, Vienna Austria, 2003.
20. Papadimitriou N., **Erimaki S**, Christakos CN. Spinal stretch reflex loop oscillations influence motor unit activation and firing with consequences for the control of muscle contractions and tremor. 16th Annual Meeting of the Hellenic Soc. Neurosci., Thessaloniki, Greece, 2001.
21. **Erimaki S**, Papadimitriou N, Christakos CN. Types and origin of physiological tremor in steady and time-varying muscle contractions. 15th Annual Meeting of the Hellenic Soc. Neurosci., Patras, Greece, 2000.
22. Christakos CN, **Erimaki S**. Components of physiological tremor in static and dynamic muscle contractions. *Eur. J. Neurosci.* 2000; 12 Suppl. 11: 149.
23. **Erimaki S**, Christakos CN. Motor unit synchrony and muscle tremor types. *Soc. Neurosci. Abstr.* 1999; 25: 1150.
24. **Erimaki S**, Christakos CN. Physiological muscle tremor and motor unit synchrony. 14th Annual Meeting of the Hellenic Soc. Neurosci., Volos, Greece, 1999.
25. **Erimaki S**, Windhorst U, Christakos CN. Two parallel mechanisms of motor unit synchrony in static and dynamic muscle contractions. *Soc. Neurosci. Abstr.* 1998; 24: 674.

26. **Erimaki S**, Christakos CN. Correlations of motor unit activities in static and dynamic muscle contractions. Eur. J. Neurosci. 1998; Suppl. 10, 194.
27. **Erimaki S**, Christakos CN. Motor unit synchrony in muscle contractions. Eur. Winter Conf. on Brain Res., ARC2000, France, 1998.
28. **Erimaki S**, Christakos CN. Motor unit activities and correlations in static and dynamic muscle contractions. 13th Annual Meeting of the Hellenic Soc. Neurosci., Athens, Greece, 1997.
29. Erimakis GM, Damilakis J, **Erimaki S**. Cost-effectiveness and outcome assessment of magnetic resonance imaging in diagnosing degenerative disk diseases: preliminary results. Annual Meeting of the International Society for Technological Assessment in Health Care, 13: 132, 1997
30. Boller M, Moschovakis AK, **Erimaki S**. An in vitro approach to morphological and physiological characteristics of saccade related neurons in the colliculus superior and brainstem of mammals. Methodological aspects. 12th Annual Meeting of the Hellenic Soc. Neurosci., Crete, Greece, 1996.

(E) Invited presentations

1. **Erimaki S**. Treatment of cerebral venous thrombosis. First Aegean Meeting on Neurologic Therapeutics, Heraklion Crete, Greece, 2004.