

Vanesa Soto León  
FENNSI group  
[vsleon@sescam.iccm.es](mailto:vsleon@sescam.iccm.es)  
ORCID: 0000-0002-2534-5369



Since 2005, when I obtained my first university degree, I have developed an intense and regular research activity in the FENNSI research group of the Hospital Nacional de Paraplégicos de Toledo, focused on 5 of the main research lines of the group:

- Non-invasive brain stimulation techniques.
- Development of non-invasive brain stimulation with static magnetic fields.
- Evaluation of the central and peripheral nervous system through TMS, EEG, fmri, EMG.
- Evaluation and search for pharmacological and non-pharmacological treatments in fatigue diseases: post-covid and spinal cord injury.

This research together with my training in engineering and neurosciences has resulted in a quality production, including publications, contributions to scientific congresses, research projects, patents and collaborations in external clinical trials as researcher and study coordinator.

Scientific dissemination and teaching are two important subjects in my career, collaborating in different dissemination events, tutoring undergraduate and master students and directing doctoral theses. My teaching is focused on the teaching of non-invasive brain stimulation techniques, electroencephalography recordings and signal analysis and biomedical imaging.

Selected articles:

1: Mordillo-Mateos L, **Soto-León V**, Torres-Pareja M, Peinado-Palomino D, Mendoza-Laiz N, Alonso-Bonilla C, Dileone M, Rotondi M, Aguilar J, Oliviero A. Fatigue in Multiple Sclerosis: General and Perceived Fatigue Does Not Depend on Corticospinal Tract Dysfunction. *Front Neurol.* 2019 Apr 9;10:339. doi: 10.3389/fneur.2019.00339. PMID: 31024433; PMCID: PMC6465550.

2: **Soto-León V**, Torres-Llacsá M, Mordillo-Mateos L, Carrasco-López C, Pineda-Pardo JA, Velasco AI, Abad-Toribio L, Tornero J, Foffani G, Strange BA, Oliviero A. Static magnetic field stimulation over motor cortex modulates resting functional connectivity in humans. *Sci Rep.* 2022 May 12;12(1):7834. doi: 10.1038/s41598-022-11859-5. PMID: 35551490; PMCID: PMC9098424.

3: Carrasco-López C, **Soto-León V**, Céspedes V, Profice P, Strange BA, Foffani G, Oliviero A. Static Magnetic Field Stimulation over Parietal Cortex Enhances Somatosensory Detection in Humans. *J Neurosci.* 2017 Apr 5;37(14):3840-3847. doi: 10.1523/JNEUROSCI.2123-16.2017. Epub 2017 Mar 9. PMID: 28280254; PMCID: PMC6596712.

4: **Soto-Leon V**, Alonso-Bonilla C, Peinado-Palomino D, Torres-Pareja M, Mendoza-Laiz N, Mordillo-Mateos L, Onate-Figuerez A, Arias P, Aguilar J, Oliviero A. Effects of fatigue induced by repetitive movements and isometric tasks on reaction time. *Hum Mov Sci.* 2020 Oct;73:102679. doi: 10.1016/j.humov.2020.102679. Epub 2020 Sep 25. PMID: 32980590.

5: Onate-Figuérez A, Avendaño-Coy J, Fernández-Canosa S, **Soto-León V**, López-Molina MI, Oliviero A. Factors Associated With Fatigue in People With Spinal Cord Injury: A Systematic Review and Meta-analysis. *Arch Phys Med Rehabil.* 2022 Aug 12:S0003-9993(22)00574-3. doi: 10.1016/j.apmr.2022.07.017. Epub ahead of print. PMID: 35964699.

6: Esclarin-Ruz A, Rodríguez-Carrión I, Ceruelo-Abajo S, Palazón-Garcia R, Ayuga-Loro F, Carrasco-Lopez C, Alcobendas-Maestro M, Casado-Lopez RM, Talavera-Diaz F, **Soto-León V**, Campolo M, Romero-Ganuzza FJ, Florensa-Vila J, Garcia-Marco D, Rotondi M, Oliviero A. Phase II/III placebo-controlled randomized trial of safety and efficacy of growth hormone treatment in incomplete chronic traumatic spinal cord injury. *Spinal Cord.* 2021 Aug;59(8):917-924. doi: 10.1038/s41393-021-00662-0. Epub 2021 Jul 5. PMID: 34226654.

7: Lozano-Soto E, **Soto-León V**, Sabbarese S, Ruiz-Alvarez L, Sanchez-Del-Rio M, Aguilar J, Strange BA, Foffani G, Oliviero A. Transcranial static magnetic field stimulation (tSMS) of the visual cortex decreases experimental photophobia. *Cephalalgia.* 2018 Jul;38(8):1493-1497. doi: 10.1177/0333102417736899. Epub 2017 Oct 11. PMID: 29020806.

8: Yebra M, Galarza-Vallejo A, **Soto-Leon V**, Gonzalez-Rosa JJ, de Berker AO, Bestmann S, Oliviero A, Kroes MCW, Strange BA. Action boosts episodic memory encoding in humans via engagement of a noradrenergic system. *Nat Commun.* 2019 Aug 6;10(1):3534. doi: 10.1038/s41467-019-11358-8. PMID: 31388000; PMCID: PMC6684634.

9: Treu S, Gonzalez-Rosa JJ, **Soto-Leon V**, Lozano-Soldevilla D, Oliviero A, Lopez-Sosa F, Reneses-Prieto B, Barcia JA, Strange BA. A ventromedial prefrontal dysrhythmia in obsessive-compulsive disorder is attenuated by nucleus accumbens deep brain stimulation. *Brain Stimul.* 2021 Jul-Aug;14(4):761-770. doi: 10.1016/j.brs.2021.04.028. Epub 2021 May 11. PMID: 33984535.

10: Brocalero-Camacho A, Pérez-Borrego YA, **Soto-León V**, Rodriguez-Matas MJ, Foffani G, Oliviero A. Effects of COVID-19 lockdown on chronic drug-resistant pain patients treated using brain stimulation approaches. *Brain Stimul.* 2020 Jul-Aug;13(4):1089-1090. doi: 10.1016/j.brs.2020.05.003. Epub 2020 May 8. PMID: 32389838; PMCID: PMC7206438.