EGI

Next Generation Integrated HD-EEG + Neuromodulation

Geodesic Transcranial Electrical Neuromodulation 200 (GTEN 200)*

Four neurotechnology brands.
One shared mission.

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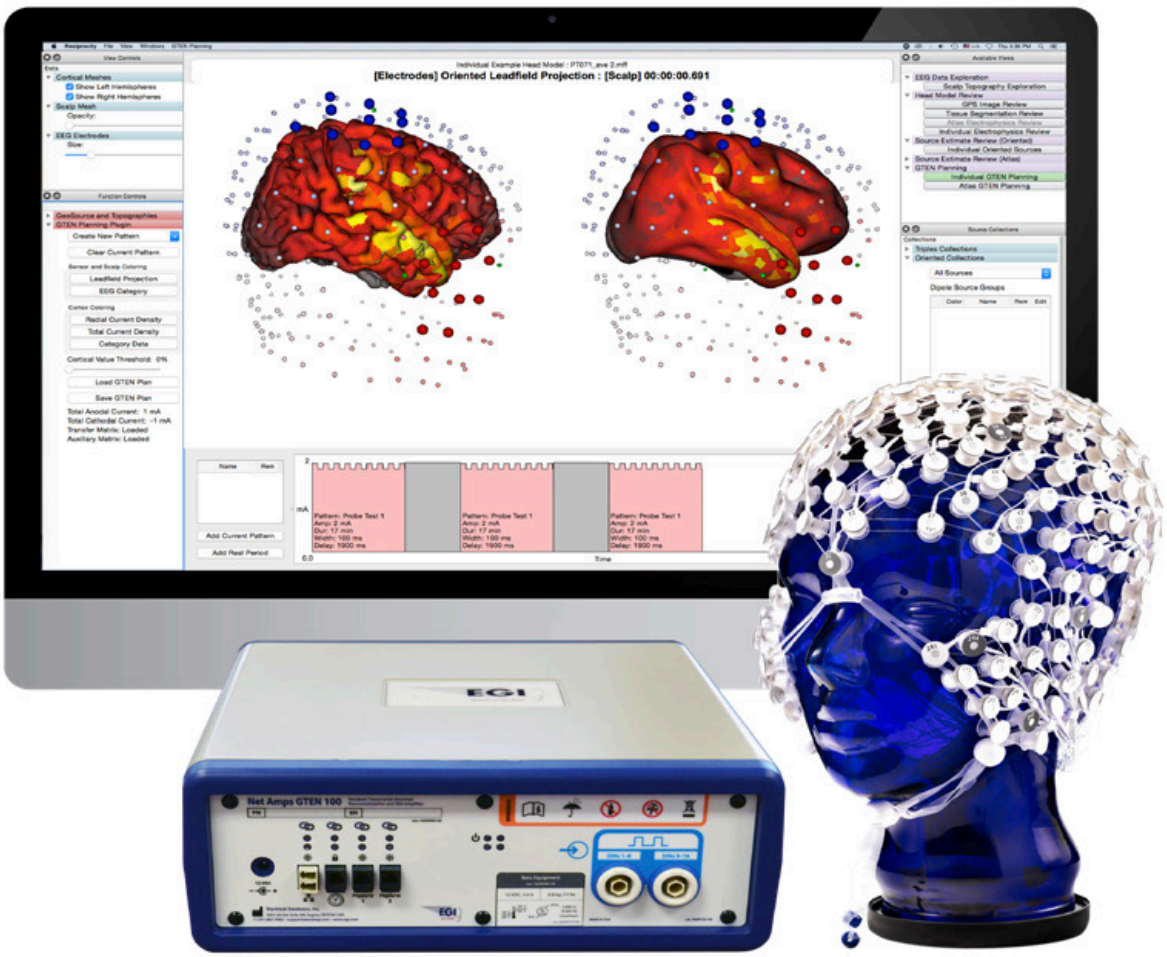
Record HD-EEG And Deliver Current Simultaneously - Using The Same Geodesic Sensor Net

A single integrated platform featuring:

- Options for 64, 128, or 256 channel sensor nets allowing any electrodes to serve as anodes, cathodes or recording electrodes
- Up to 2 mA current intensity for custom HD tDCS, tACS, tPCS, and tRNS protocols
- Individualized head modeling and a library of age-matched atlases
- Source localization tools (LORETA, sLORETA, LAURA)
- Software Developer's Kit (SDK) included complimentary



Robust Planning Tools To Optimize For Each Individual

Create An MR-based Individualized Head Model Or Select An Age-Matched Atlas

- Account for intersubject differences from the start

Design Your Custom Stimulation Protocols In One Of Three Ways:

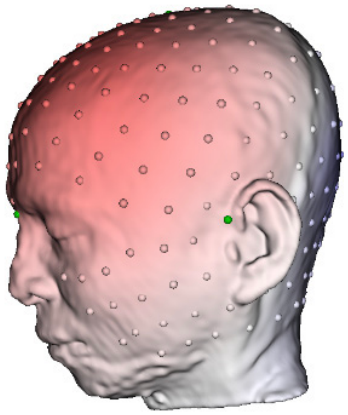
- Manually select electrodes and current level
- Choose a region of interest within the brain to target
- Use EEG-based source localization to guide the stimulation paradigm

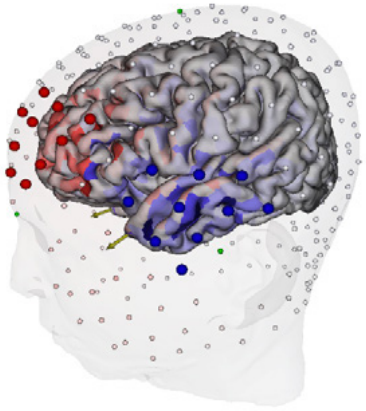
Localize With Confidence

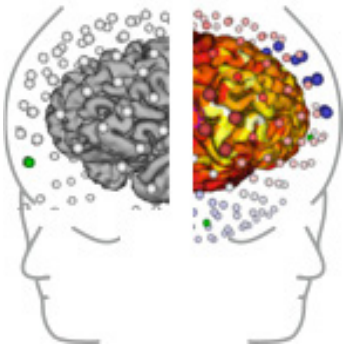
- High density, whole head electrode coverage and finite difference method head models allow for highly accurate source localization

Apply The Reciprocity Theorem To Align Stimulation With Physiology

- A cortical source's scalp voltage projection is the same as the scalp stimulation required to stimulate/ modulate that cortical source[1]







Maximize Flexibility With A Larger Array Of Montages

Localized Targeting By Selecting & Combining Custom Stimulation Arrays

- Up to 256 channels of EEG, of which 190 channels can be used for stimulation, with spatial selectivity to stimulate multiple anodal/cathodal pairs at a given time (minimum of 10 pairs needed to achieve maximum current)

Achieve Greater Focality With Smaller Stimulation Sensors

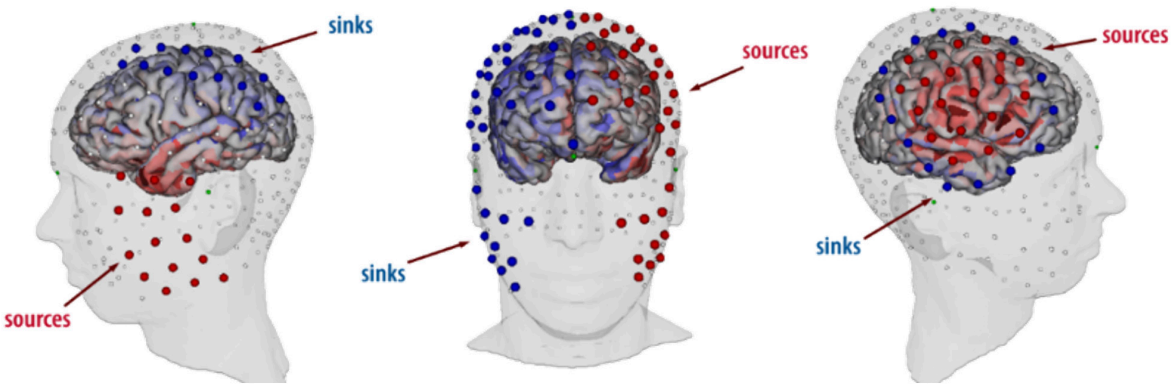
- 1cm^2 enables 0.2mA/cm^2 current density in patch electrodes

Measure The Targets And Effects With HD-EEG

- Use EEG-based source localization to guide the stimulation paradigm and seamlessly record EEG while stimulating

Close The Loop And Change Protocols In Real Time Driven By Physiology

- Use the Software Developers' Kit (SDK) and other open-source platforms to develop and perform closed-loop neuromodulation



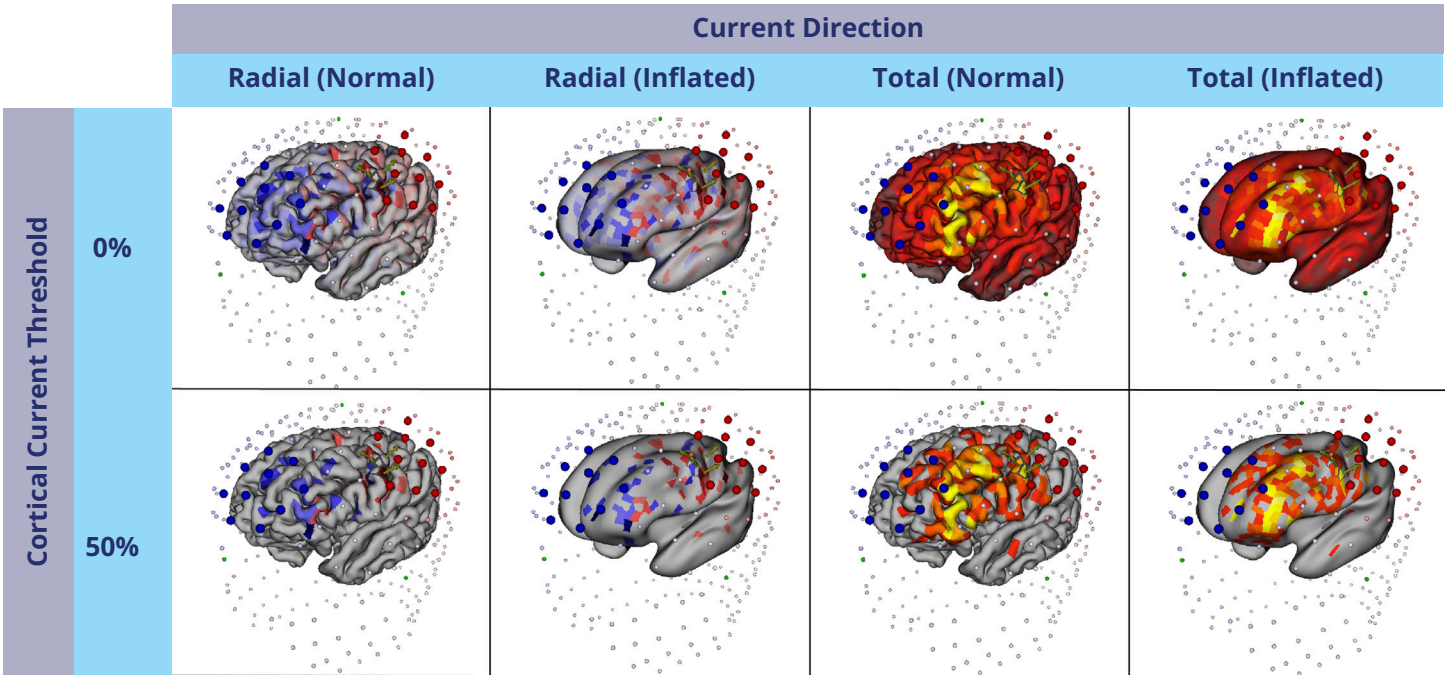
Intuitive Visualization of Current Density and Direction with Reciprocity software

Factors that influence tES efficacy:

- Consideration of individual anatomy[2]
- Use of a higher number of more focused stimulation electrodes[3]
- Precise, repeatable electrode placement[4]

GTEN: Simultaneous neuroimaging via HD-EEG

- Same platform for HD-EEG and tES, enabling concurrent recording and stimulating
- Real-time viewing in source space for monitoring and optimizing paradigms
- Flexible montages for any combination of sink and source



GTEN 200 Can Be Purchased As A New System, Or As An Easy Upgrade From The GES 400

Product Packages

Product Name	Details
GTEN 200 Research Neuromodulation System — 64, 128, or 256 channel	• GTEN 200 amplifier with sensor Nets • GTEN targeting and planning software module • GTEN control software module • Hospital grade isolation transformer • iMac computer • Net Station software license and HASP • Articulated Arm and mounting brackets • Net Support Kit
Geodesic Sensor Net	Sponge-based HydroCel Geodesic Sensor Nets for rapid application, or gel-based for long term recordings

Options

Product Name	Details
GeoSource 3 Software	Electrical source imaging software with atlas models, or individualized head models

HD-EEG: High Density EEG
tDCS: Transcranial direct-current stimulation
tACS: Transcranial alternating current Stimulation
tPCS: Transcranial pulsed current stimulation
tRNS: transcranial random noise stimulation
LORETA: Low-resolution electromagnetic tomography
sLORETA: Standardized low-resolution electromagnetic tomography
LAURA: Local autoregressive average

1. Luu P, Essaki Arumugam EM, Anderson E, Gunn A, Rech D, Turovets S and Tucker DM (2016) Slow-Frequency Pulsed Transcranial Electrical Stimulation for Modulation of Cortical Plasticity Based on Reciprocity Targeting with Precision Electrical Head Modeling. Front. Hum. Neurosci. 10:377. doi: 10.3389/fnhum.2016.00377
2. V. Di Lazzaro and J. C. Rothwell, "Corticospinal activity evoked and modulated by non-invasive stimulation of the intact human motor cortex: Corticospinal activity and the human motor cortex," J. Physiol., vol. 592, no. 19, pp. 4115–4128, Oct. 2014
3. P. Faria, A. Leal, and P. C. Miranda, "Comparing different electrode configurations using the 10-10 international system in tDCS: A finite element model analysis," 2009, pp. 1596–1599
4. J. P. Dmochowski, A. Datta, M. Bikson, Y. Su, and L. C. Parra, "Optimized multi-electrode stimulation increases focality and intensity at target," J. Neural Eng. 2011 August; vol. 8, no. 4, p. 046011.

***Geodesic Transcranial Electrical Neuromodulation 200 (GTEN 200) System is not intended for use in diagnosis or treatment of any disease or condition. It is a scientific research instrument designed for performing measurements and acquiring data for neurophysiological research. EGI makes no representation of the suitability of the instrument for any particular research study.**

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