University of Rhode Island
DigitalCommons@URI

Senior Honors Projects

Honors Program at the University of Rhode Island

5-2018

Modeling EEG and tDCS in SCIRun Software Packages

Aiden Keene
aidenisapirate@my.uri.edu

Aiden Thomas Keene
University of Rhode Island, atk2745@gmail.com

Follow this and additional works at: https://digitalcommons.uri.edu/srhonorsprog

 Part of the Bioelectrical and Neuroengineering Commons, Bioimaging and Biomedical Optics Commons, and the Other Biomedical Engineering and Bioengineering Commons

Recommended Citation

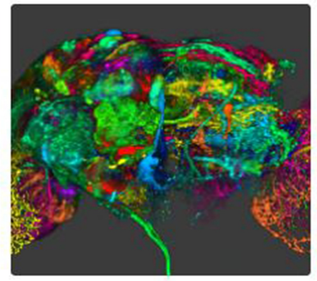
Keene, Aiden and Keene, Aiden Thomas, "Modeling EEG and tDCS in SCIRun Software Packages" (2018). *Senior Honors Projects.* Paper 668.
https://digitalcommons.uri.edu/srhonorsprog/668

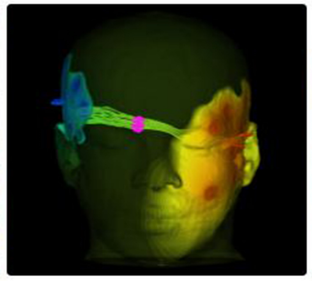
This Article is brought to you by the University of Rhode Island. It has been accepted for inclusion in Senior Honors Projects by an authorized administrator of DigitalCommons@URI. For more information, please contact digitalcommons-group@uri.edu. For permission to reuse copyrighted content, contact the author directly.

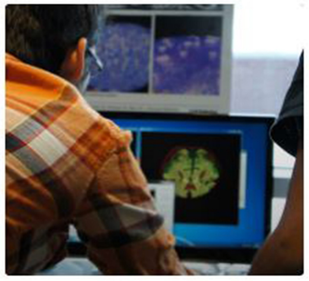
SCIRun

Aiden Keene

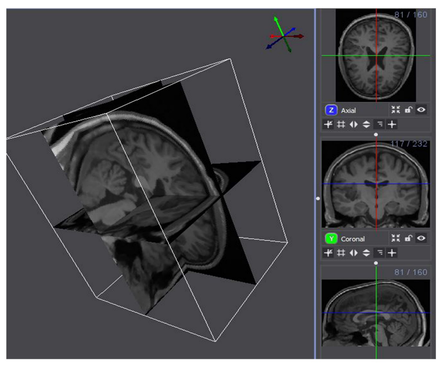
The Scientific Computing and Imaging Institute

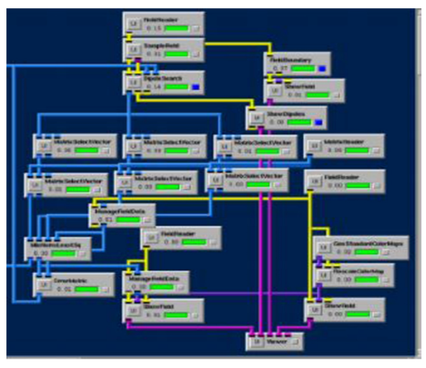




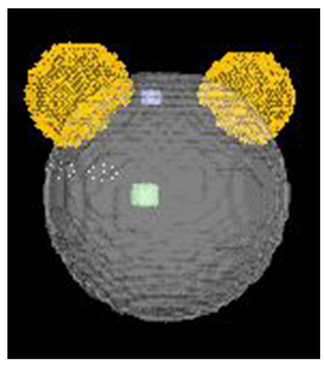


SCIrun is a problem solving environment capable of simulating, visualizing, and calculating anatomical processes.



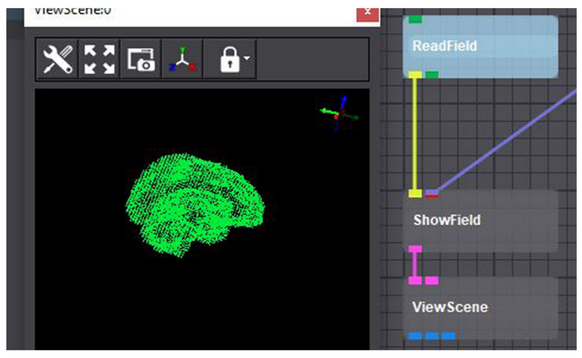


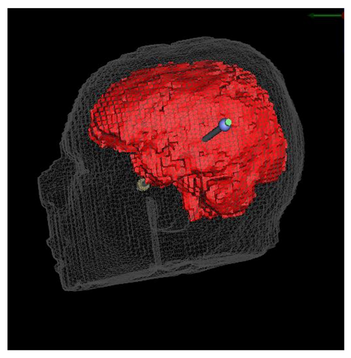
The software inputs field data and performs various complex calculations on it through different modules.

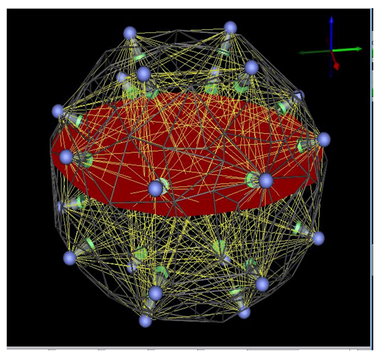


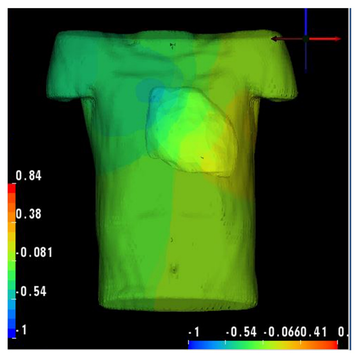
	ROI	Avr.	Std.	Min.
1	MickeyBody	775.713	788.832	41.191
2	Ear1	298.803	173.717	32.260
3	Ear2	269.890	174.888	14.754
4	ROI1	365.642	92.549	166.315
5	ROI2	446.228	66.875	321.571

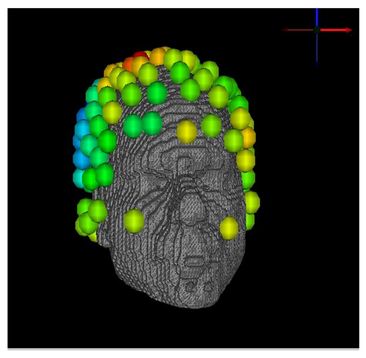
The calculations can model and display the resulting electric field data from Direct Current Stimulation (tDCS) or Magnetic Stimulation (TMS).











CREmedical focuses on brain research. Therefor the main possibility to benefit them was localizing the impact on the brain of stimulation from various electrode locations.

These Finite Element Models (FEM) show electrode readings at common locations.