EEGLAB 2022
Lublin

33rd EEGLAB Workshop, Lublin, Sept 13-16, 2022 (at last!)

Swartz Center for Computational Neuroscience

UCSD

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Thank you

Dariusz Zapała

KUL 1918
THE JOHN PAUL II CATHOLIC UNIVERSITY OF LUBLIN

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Swartz Center for Computational Neuroscience
20th Anniversary
January 2022

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Lublin is the 33rd EEGLAB Workshop!

First: UCSD (2004)
Above: Taiwan (2010)
Top right: San Diego, CA (2018)
Bottom right: Aspet, France (2019)

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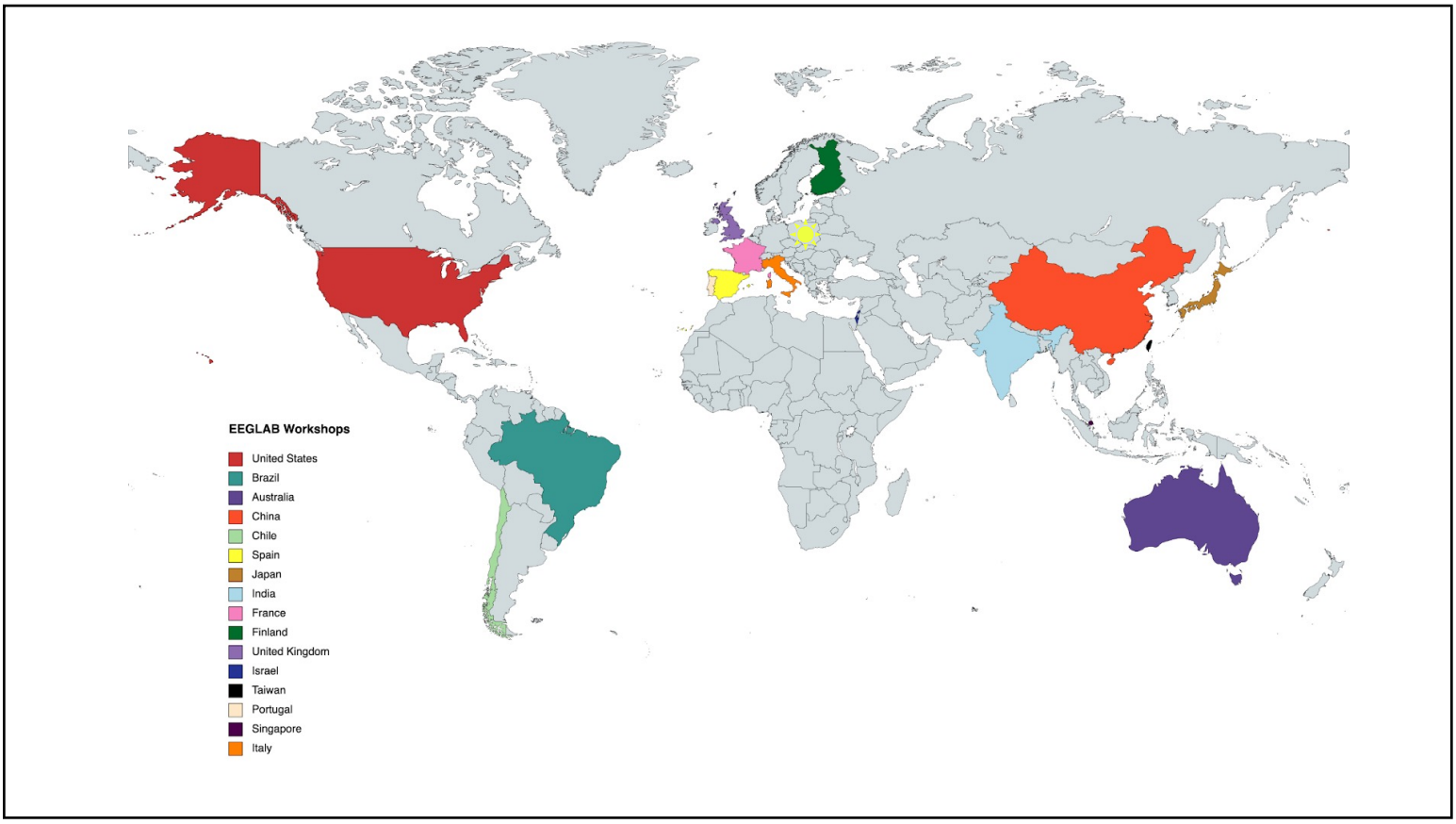

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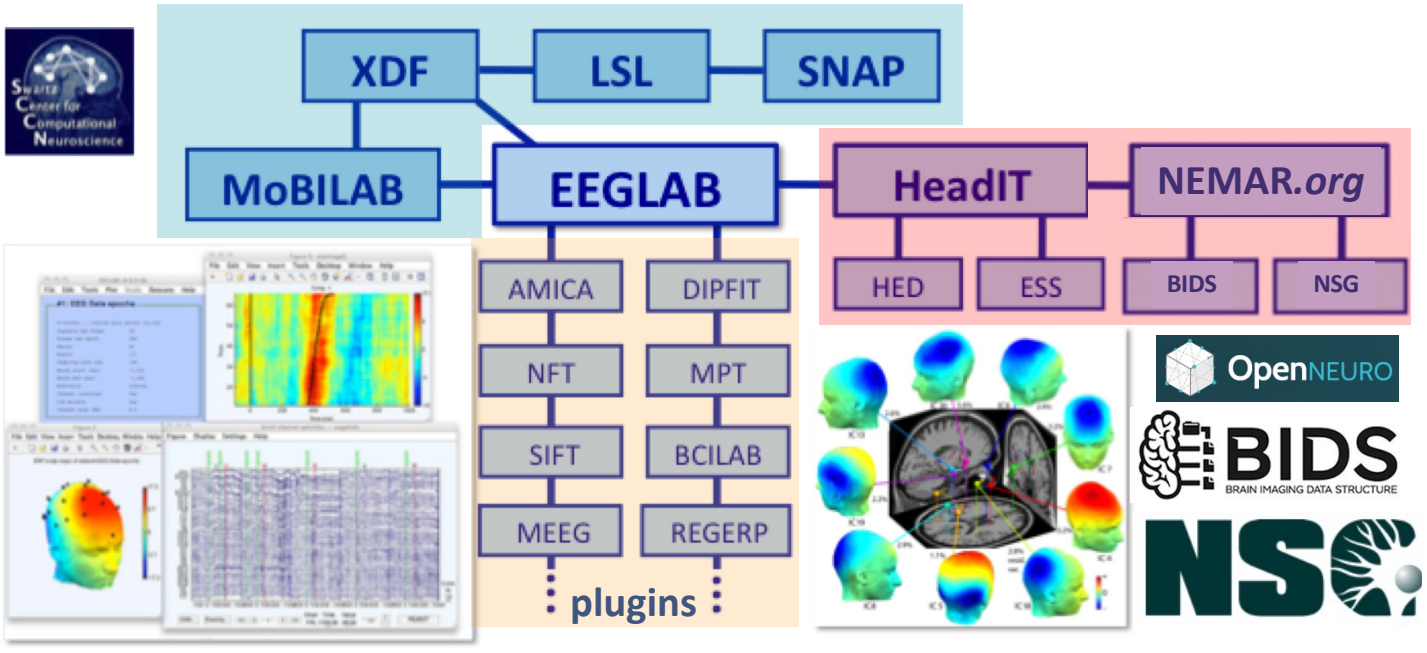
EEGLAB Ecosystem

- https://sccn.ucsd.edu/eeglab ; https://github.com/sccn/eeglab



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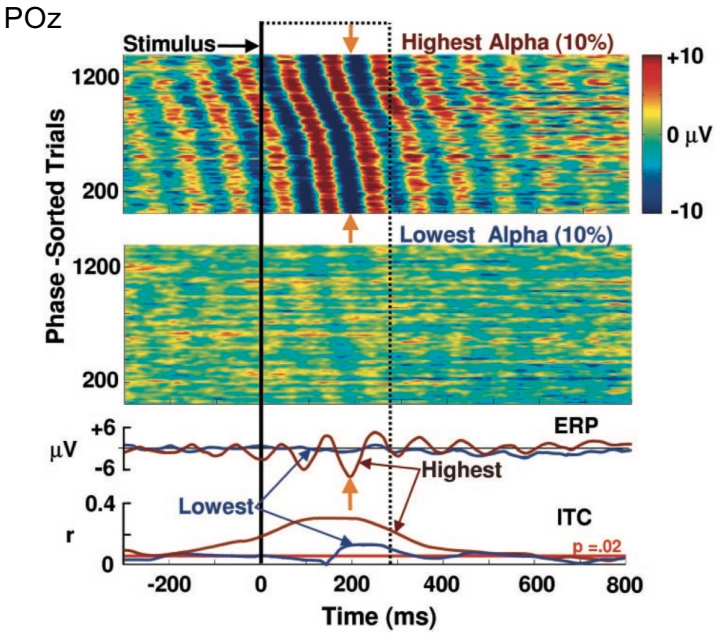
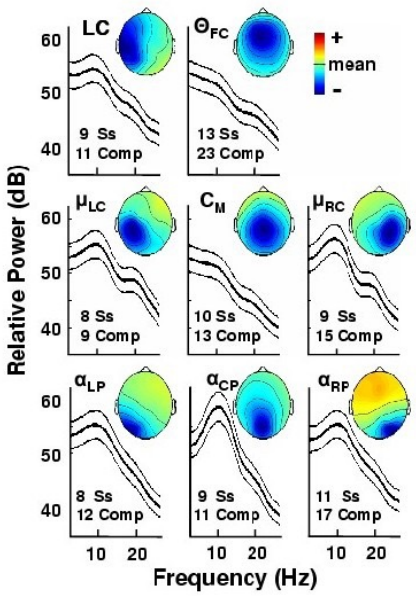
"Thinking EEGLAB"

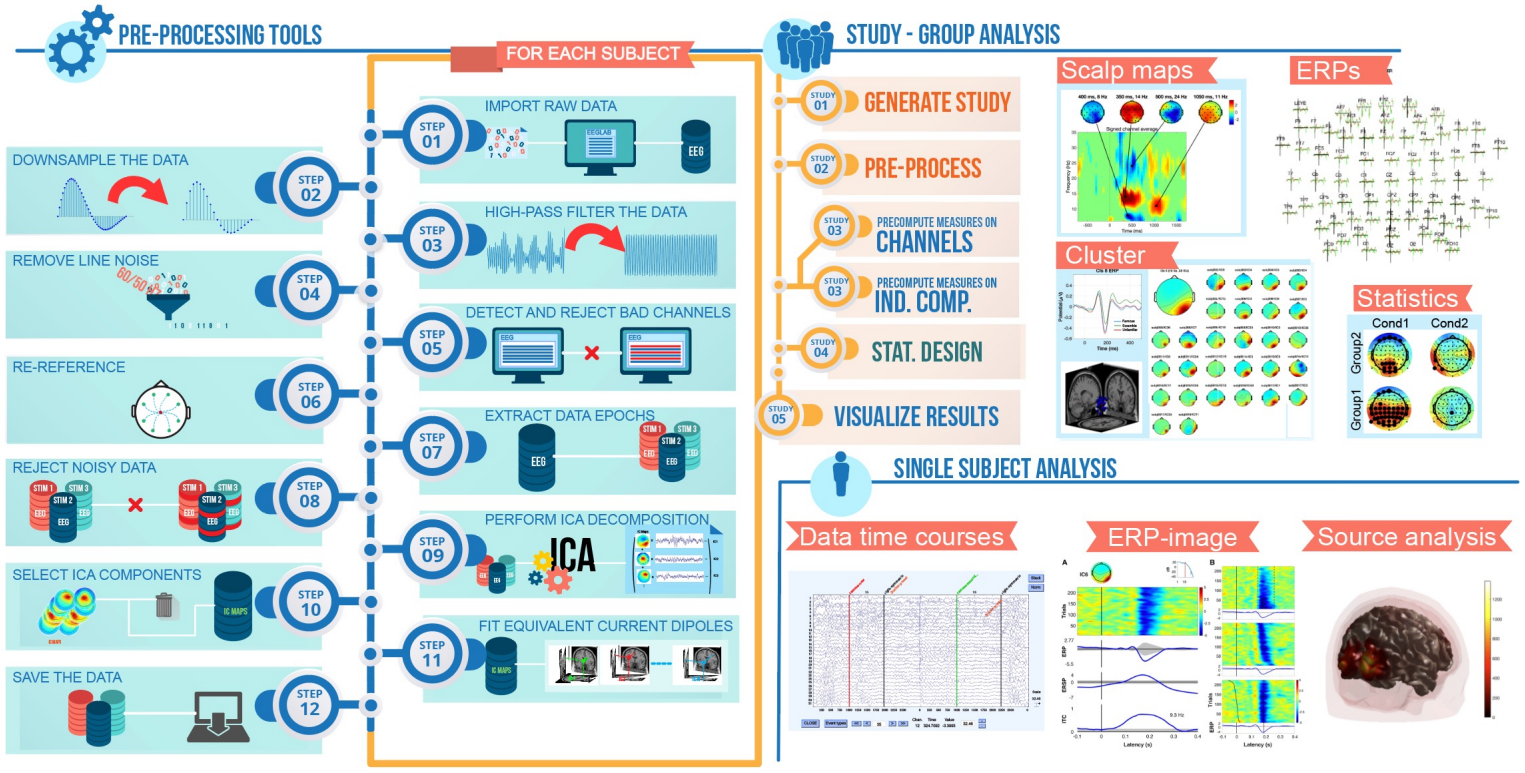
- We are fundamentally interested in *the brain*, and tools are developed to that end
- Go beyond evoked responses to more expressive ways at looking at across-trial and oscillatory activity—embrace nonstationarity
- Encourage solid statistical designs and use of cutting-edge techniques
- Soft start: Teach coding by revealing the code behind GUI actions
- Open Source: The user is in control, and can know exactly how their data are being processed
- Encourage all users to make EEGLAB better through writing plugins, participating in the EEGLAB List and reporting/fixing bugs
- Push the frontiers of computational neuroscience

Makeig et al., *Science* 2002





EEGLAB Workflows



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Tuesday, September 13th

Overview and Time/frequency

- 9:00 – 9:15 – Introduction (John Iversen)
- 9:15 – 9:45 – EEGLAB overview (Arnaud Delorme)
- 9:45 – 11:00 – Data import, Artifact rejection (Johana Wagner)
- Break
- 11:15 – 12:30 – Time-frequency decompositions: Theory and practice (Mateusz Gola)
- 12:30 – 13:00 – Phase amplitude coupling (Ramon Martinez)
- 13:00-14:30 – Lunch

ICA

- 14:30 – 15:30 – Mining event-related brain dynamics I (Scott Makeig)
- 15:30 – 16:30 – ICA theory (John Iversen)
- Break
- 16:45 – 18:00 – ICA decomposition practicum (Johana Wagner)
- 18:00 – 18:30 – Beginner office hour (Ramon Martinez and John Iversen)

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Wednesday, September 14th (bring your poster if you have one)

Group analysis and ICA clustering in EEGLAB

- 9:00 - 10:00 – Bootstrap and correction for multiple comparisons - EEGLAB statistics (Arnaud Delorme)
- 10:00 – 10:45 – Using the Dipfit plugin of EEGLAB (Arnaud Delorme)
- Break
- 11:00 - 12:00 – Creating a STUDY and STUDY design - plotting and computing statistics in channels (Mateusz Gola)
- 12:00 - 13:00 – Face processing dataset and some scripting (Ramon Martinez)
- 13:00-14:30 – Lunch

Source information flow

- 14:30 - 15:00 – Why cluster ICA components? (Scott Makeig)
- 15:00 - 15:45 – ICA component clustering and plotting (Ramon Martinez)
- Break
- 16:00 – 17:15 – Source information flow and Granger-Causal modeling tools (John Iversen)

Participant poster session

- 17:30 – 19:30 – Participants bring their poster to discuss
- 19:45 – banquet (included in registration)

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Thursday, September 15th

- 9:00 – 10:00 – HED and BIDS (Arnaud Delorme and Dung Truong)
- 10:00 – 11:00 – Mobile Brain Body Imaging and Applications (John Iversen)
- 11:00 - 15:30 – group excursion with lunch in The Open Air Village Museum in Lublin
- 15:30 – 17:00 – Mining event-related brain dynamics II (Scott Makeig)
- 17:00 – 18:00 – Scripting practicum (Ramon Martinez)

Friday, September 16th

- 9:00 – 10:00 – Deep Learning and EEG (Arnaud Delorme and Dung Truong)
- 10:00 – 11:00 – TMS and EEG (Mateusz Gola)
- 10:00 – 11:00 – Practicum, small group projects
- Break
- 11:00 – 12:00 – Practicum, small group projects
- 12:00 – 13:00 – Participant project presentations and general discussion
- 13:00 - 14:15 – Lunch

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Any Questions?