



BESA® Research Workshop Warsaw, 18th September – 20th September, 2019

What can you expect?

- A workshop program catered to the needs of beginners through to advanced source analysis – choose the program customized to your needs
- Hands-on analysis of a real dataset from raw data to source images and brain connectivity – step by step.
- Introductory presentations to help understanding the methodological background of BESA Research features.
- Please note: The program is subject to changes.

| Day 1 Getting started, ERP, Discrete Source Analysis | | |
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| Introductory level | 09:00-09:30 | Introduction and initial setup |
| | 09:30-10:30 | Data Review (FFT, DSA, re-montaging), Preprocessing (interpolation, artifact handling, filtering) |
| | 10:30-11:00 | - Coffee break - |
| | 11:00-12:30 | Artifact Correction (automatic and manual), Trigger Handling (using attributes, defining conditions), Artifact Rejection , Averaging , Classic ERP Analysis (peak analysis, mean amplitudes) |
| | 12:30-13:30 | - Lunch break - |
| | 13:30-14:30 | Batch Processing (creating grand averages, combining conditions) |
| | 14:30-15:00 | - Coffee break- |
| Advanced level | 15:00-16:30 | Discrete Source Analysis (single dipoles vs. regional sources) |
| | 16:30-17:00 | Q & A |



Day 2 MRI co-registration, Source Imaging, Source Montages, and Time-Domain Beamformers

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| Advanced level | 09:30-10:30 | Co-registration of EEG and MRI data (using BESA MRI) |
| | 10:30-10:45 | - Coffee break - |
| | 10:45-12:15 | Distributed Source Analysis I (Comparison of different volume techniques, e.g. LAURA, sLORETA), Brain Atlases |
| | 12:15-13:15 | - Lunch break - |
| | 13:15-14:45 | Distributed Source Analysis II (Bayesian imaging, cortical imaging, template head models) |
| | 14:45-15:15 | - Coffee break - |
| | 15:15-16:00 | Source Montages (creating source montages) |
| | 16:00-17:00 | Time-Domain Beamformers and Virtual Sensor Montages |

Day 3 Artifact Correction, EEG-fMRI, Brain Connectivity, and Statistics

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| Advanced level | 09:00-09:45 | Artifact Correction (understanding the background and different techniques including PCA and ICA) |
| | 09:45-10:30 | Simultaneous EEG-fMRI Data Processing (fMRI gradient artifact, ballistocardiographic artifact, fMRI-informed source analysis) |
| | 10:15-10:45 | - Coffee break - |
| | 10:45-12:15 | Time-Frequency Analysis (wavelets, complex demodulation; using BESA Connectivity), Connectivity Estimators (coherence, Granger causality, other methods, in sensor space and source space) |
| | 12:15-13:30 | - Lunch break - |
| | 13:30-14:00 | Time-Frequency Beamforming, Dynamic Imaging of Coherent Sources (DICS) |
| | 14:00-15:00 | Cross-subject Statistics (using batch scripting and BESA Statistics) |
| | 15:00-15:30 | - Coffee break - |
| | 15:30-16:30 | ANOVA, ANCOVA, and Correlation |
| | 16:30-17:00 | Q & A |