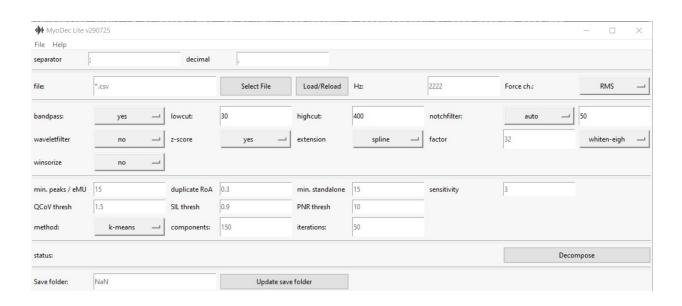# Description of options and parameters

1. separator – Enter the delimiter between columns in the electromyography (EMG) data file (e.g., « , », «space», « . », « ; », « : »)
2. decimal – Enter the decimal separator used in the cells with EMG data (e.g., « , », «space», « . »)
3. file – Enter the path to the EMG data file of interest
4. Select file – Choose the file for decomposition
5. Load/Reload – Button to load or reload the selected file
6. Hz – Enter the sampling frequency used during EMG recording
7. Force ch. – Select the method for force calculation (RMS or First Channel)
8. Bandpass – Enable or disable the bandpass filter (yes/no)
9. lowcut/highcut – Adjust the bandpass filter's passband
10. Notchfilter – Enter the frequency of the power line noise to be filtered (default: 50 Hz)
11. Waveletfilter – Threshold wavelet filtering using the db2 reference (Yes/No)
12. Z-score – Standardize the data (Yes/No)
13. Extension – Apply extension (Delay-based extension – CKS Holobar et. Al 2004, B-spline-based extension – Myodec, or no extension – None)
14. Factor – Select the extension factor (window for CKS delay or B-spline order for B-spline extension)
15. Whiten-eigh – Data decorrelation method (SVD/eigh)
16. Winsorize – Apply Winsorization to EMG signals (Yes/No)
17. min. peaks / Emu – Enter the minimum number of peaks in MUST
18. duplicate. RoA – Enter the threshold for minimum overlap of motor units (MU) to be considered unique (0–1)
19. min. Standalone – Enter the minimum number of MUST peaks standing alone in the main pattern (default: 15)
20. Sensitivity – Distance of the MUST peak cluster to be considered standalone in the main pattern (default: ±3 fs)
21. QCoV thresh – Enter the threshold for filtering motor units (MU) based on the uniformity of MUST peak distribution
22. SIL thresh – Threshold for filtering MU based on the quality of clustering of the heights of the reconstructed MUST pattern peaks
23. PNR thresh – Threshold for filtering MU based on the signal-to-noise ratio in the reconstructed signal
24. Method – Method for separating true peaks from false ones (k-means, A2D)
25. Components – Enter the number of iterations for searching motor units
26. Iterations – Enter the number of iterations for optimizing weights during motor unit search
27. status – Execution status
28. Decompose – Start decomposition after loading the file and selecting parameters
29. Save folder – Select the folder for saving results
30. Update save folder – Select the folder for saving when the preferred save path is changed

Instructions

1. Click the Select file button.

2. In the window that appears, choose the desired raw EMG data file.

3. After selecting the file, set the appropriate separator and decimal delimiters for columns and decimal places.

4. Click the Load/Reload button and use it again when adding other files.

5. Once the file is loaded (the timer in the status window stops, and the Decompose button becomes active),

6. Select the necessary filtering, extension, decomposition, and other parameters (all options are described in the "Description of Options and Parameters"). Also, choose the preferred path for saving the processed data and statistics.

7. Click the Decompose button.

8. Wait for the operation to complete. During the process, the elapsed time from the start to the end of decomposition is displayed.

9. In the results folder, the following files will appear:
   • Raster plot and regression analysis of motor units,
   • File with statistics of MU,
   • Spectral analysis of EMG channels,
   • Raw EMG data,
   • Filtered EMG data.