**APPENDIX I**

We used custom made software to measure three variables related to the AED: AED mean (AED-M); AED standard deviation (AED-SD), and AED peak (AED-P). The procedure to calculate these variables follows the next steps:

1) We calculate the Fourier transform

where τ is time and ω is frequency.

2) The function

yields the energy of the signal at time τ and frequency ω

3) In this context, the integral

corresponds to the total energy of the signal.

4) We calculate the average energy of the signal in the time

This function only depends on the frequency and yields the percentage of energy corresponding to frequency ω

5) Then we calculate the mean value of the frequency energy density

,

and its standard deviation

,

6) AED-P is the frequency corresponding to the maximum energy density.