Table 1: Detection methods studied and their main properties.

| Method named | EMG Signal processing | FRP Shaping | Detection |
|---|---|---|---|
| *Visual* | N/A | N/A | Visually and Manually |
| *MonoWind* | No wavelet transform | Based on one moving window | N/A |
| *MultiWind* | No wavelet transform | Based on several moving window | N/A |
| *WPT/med* | WPT | Based on several moving window | Eq. (16) |
| *WPT/mean* | WPT | Based on several moving window | Eq. (15) |
| *DWT/med* | DWT | Based on several moving window | Eq. (16) |
| *DWT/mean* | DWT | Based on several moving window | Eq. (15) |

Table 2: Parameters used for wavelet transform, shaping methods and limits detection.

| Wavelets Parameters | Values |
|---|---|
| Number of levels ($J$) | 4 |
| Number of DWT sub-signals ($N_S$) | 4 |
| Number of WPT sub-signals ($N_S$) | 30 |
| Wavelet type | Haar |
| **Shaping Parameters** | **Values** |
| Number of multi-windows ($V$) | 4 |
| Sizes of multi-windows method ($\Theta_{(v)}$) | $\Theta_{(1)} = 0.6s$, $\Theta_{(2)} = 0.8s$, $\Theta_{(3)} = 1.6s$, and $\Theta_{(4)} = 2s$ |
| Size of one-window method | $\Theta_{(1)} = 0.6s$ |
| **Determinations Parameters** | **Values** |
| Threshold values | $\gamma_1 = 0.2$ and $\gamma_2 = 0.2$ |