

## Introductory note.

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**Table S1.** Accuracy assessment of step length and distance. *Method A.*

| Subj. No. | No. of Steps | No. of Stride | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|---------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |               |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 26.0          | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 54           | 27.0          | 47.3             | -21.1667                     | 21.1667  | 25.6300      | -17.8526                  | 17.8526  |
| 2         | 54           | 27.0          | 60.7             | 1.1667                       | 1.1667   | 32.6500      | 4.6474                    | 4.6474   |
| 3         | 54           | 27.0          | 56.8             | -5.3333                      | 5.3333   | 30.3800      | -2.6282                   | 2.6282   |
| 4         | 52           | 26.0          | 61.8             | 3.0000                       | 3.0000   | 32.0500      | 2.7244                    | 2.7244   |
| 5         | 53           | 26.5          | 64.3             | 7.1667                       | 7.1667   | 33.7500      | 8.1731                    | 8.1731   |
| 6         | 54           | 27.0          | 64.2             | 7.0000                       | 7.0000   | 34.6900      | 11.1859                   | 11.1859  |
| 7         | 53           | 26.5          | 53.8             | -10.3333                     | 10.3333  | 28.4200      | -8.9103                   | 8.9103   |
| 8         | 52           | 26.0          | 49.5             | -17.5000                     | 17.5000  | 25.9200      | -16.9231                  | 16.9231  |
| 9         | 55           | 27.5          | 55.6             | -7.3333                      | 7.3333   | 30.2900      | -2.9167                   | 2.9167   |
| 10        | 54           | 27.0          | 56.1             | -6.5000                      | 6.5000   | 30.2000      | -3.2051                   | 3.2051   |
| 11        | 52           | 26.0          | 55.9             | -6.8333                      | 6.8333   | 29.1800      | -6.4744                   | 6.4744   |
| min       | 52           | 26.0          | 47.3             | -21.1667                     | 1.1667   | 25.6300      | -17.8526                  | 2.6282   |
| mean      | 53           | 26.7          | 56.9             | -5.1515                      | 8.4848   | 30.2873      | -2.9254                   | 7.7855   |
| max       | 55           | 27.5          | 64.3             | 7.1667                       | 21.1667  | 34.6900      | 11.1859                   | 17.8526  |

**Table S2.** Accuracy assessment of step length and distance. *Method B -mode 0.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 55.8             | -7.0000                      | 7.0000   | 29.0100      | -7.0192                   | 7.0192   |
| 2         | 52           | 61.1             | 1.8333                       | 1.8333   | 31.7500      | 1.7628                    | 1.7628   |
| 3         | 52           | 56.5             | -5.8333                      | 5.8333   | 29.3900      | -5.8013                   | 5.8013   |
| 4         | 52           | 59.9             | -0.1667                      | 0.1667   | 31.1300      | -0.2244                   | 0.2244   |
| 5         | 52           | 63.1             | 5.1667                       | 5.1667   | 32.7900      | 5.0962                    | 5.0962   |
| 6         | 52           | 65.3             | 8.8333                       | 8.8333   | 33.9600      | 8.8462                    | 8.8462   |
| 7         | 52           | 64.8             | 8.0000                       | 8.0000   | 33.7000      | 8.0128                    | 8.0128   |
| 8         | 52           | 54.2             | -9.6667                      | 9.6667   | 28.1600      | -9.7436                   | 9.7436   |
| 9         | 52           | 57.2             | -4.6667                      | 4.6667   | 29.7600      | -4.6154                   | 4.6154   |
| 10        | 52           | 56.8             | -5.3333                      | 5.3333   | 29.5600      | -5.2564                   | 5.2564   |
| 11        | 52           | 53.8             | -10.3333                     | 10.3000  | 27.9700      | -10.3526                  | 10.3526  |
| min       | 52           | 53.8             | -10.3333                     | 0.1667   | 27.9700      | -10.3526                  | 0.2244   |
| mean      | 52           | 59.0             | -1.7424                      | 6.0727   | 30.6527      | -1.7541                   | 6.0664   |
| max       | 52           | 65.3             | 8.8333                       | 10.3000  | 33.9600      | 8.8462                    | 10.3526  |

**Table S3.** Accuracy assessment of step length and distance. *Method B - mode 1.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 57.0             | -5.0000                      | 5.0000   | 29.6300      | -5.0321                   | 5.0321   |
| 2         | 52           | 58.6             | -2.3333                      | 2.3333   | 30.4700      | -2.3397                   | 2.3397   |
| 3         | 52           | 58.0             | -3.3333                      | 3.3333   | 30.1700      | -3.3013                   | 3.3013   |
| 4         | 52           | 58.8             | -2.0000                      | 2.0000   | 30.5600      | -2.0513                   | 2.0513   |
| 5         | 52           | 59.6             | -0.6667                      | 0.6667   | 30.9900      | -0.6731                   | 0.6731   |
| 6         | 52           | 59.3             | -1.1667                      | 1.1667   | 30.8500      | -1.1218                   | 1.1218   |
| 7         | 52           | 59.3             | -1.1667                      | 1.1667   | 30.8200      | -1.2179                   | 1.2179   |
| 8         | 52           | 56.6             | -5.6667                      | 5.6667   | 29.4400      | -5.6410                   | 5.6410   |
| 9         | 52           | 57.2             | -4.6667                      | 4.6667   | 29.7600      | -4.6154                   | 4.6154   |
| 10        | 52           | 58.7             | -2.1667                      | 2.1667   | 30.5300      | -2.1474                   | 2.1474   |
| 11        | 52           | 55.4             | -7.6667                      | 7.6667   | 28.8100      | -7.6603                   | 7.6603   |
| min       | 52           | 55.4             | -7.6667                      | 0.6667   | 28.8100      | -7.6603                   | 0.6731   |
| mean      | 52           | 58.0             | -3.2576                      | 3.2576   | 30.1845      | -3.2547                   | 3.2547   |
| max       | 52           | 59.6             | -0.6667                      | 7.6667   | 30.9900      | -0.6731                   | 7.6603   |

**Table S4.** Accuracy assessment of step length and distance. *Method B - mode 2.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 58.2             | -3.0000                      | 3.0000   | 30.2800      | -2.9487                   | 2.9487   |
| 2         | 52           | 61.3             | 2.1667                       | 2.1667   | 31.8900      | 2.2115                    | 2.2115   |
| 3         | 52           | 60.6             | 1.0000                       | 1.0000   | 31.5200      | 1.0256                    | 1.0256   |
| 4         | 52           | 62.6             | 4.3333                       | 4.3333   | 32.5700      | 4.3910                    | 4.3910   |
| 5         | 52           | 64.9             | 8.1667                       | 8.1667   | 33.7400      | 8.1410                    | 8.1410   |
| 6         | 52           | 64.8             | 8.0000                       | 8.0000   | 33.6800      | 7.9487                    | 7.9487   |
| 7         | 52           | 64.5             | 7.5000                       | 7.5000   | 33.5300      | 7.4679                    | 7.4679   |
| 8         | 52           | 57.1             | -4.8333                      | 4.8333   | 29.6900      | -4.8397                   | 4.8397   |
| 9         | 52           | 57.2             | -4.6667                      | 4.6667   | 29.7600      | -4.6154                   | 4.6154   |
| 10        | 52           | 61.4             | 2.3333                       | 2.3333   | 31.9100      | 2.2756                    | 2.2756   |
| 11        | 52           | 57.0             | -5.0000                      | 5.0000   | 29.6500      | -4.9679                   | 4.9679   |
| min       | 52           | 57.0             | -5.0000                      | 1.0000   | 29.6500      | -4.9679                   | 1.0256   |
| mean      | 52           | 60.9             | 1.4545                       | 4.6364   | 31.6564      | 1.4627                    | 4.6212   |
| max       | 52           | 64.9             | 8.1667                       | 8.1667   | 33.7400      | 8.1410                    | 8.1410   |

**Table S5.** Accuracy assessment of step length and distance. *Method B - mode 3.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 56.9             | -5.1667                      | 5.1667   | 29.6000      | -5.1282                   | 5.1282   |
| 2         | 52           | 57.2             | -4.6667                      | 4.6667   | 29.7200      | -4.7436                   | 4.7436   |
| 3         | 52           | 56.8             | -5.3333                      | 5.3333   | 29.5100      | -5.4167                   | 5.4167   |
| 4         | 52           | 61.0             | 1.6667                       | 1.6667   | 31.7100      | 1.6346                    | 1.6346   |
| 5         | 52           | 52.1             | -13.1667                     | 13.1667  | 27.1100      | -13.1090                  | 13.1090  |
| 6         | 52           | 53.1             | -11.5000                     | 11.5000  | 27.6300      | -11.4423                  | 11.4423  |
| 7         | 52           | 63.0             | 5.0000                       | 5.0000   | 32.7800      | 5.0641                    | 5.0641   |
| 8         | 52           | 53.6             | -10.6667                     | 10.6667  | 27.8700      | -10.6731                  | 10.6731  |
| 9         | 52           | 57.0             | -5.0000                      | 5.0000   | 29.6400      | -5.0000                   | 5.0000   |
| 10        | 52           | 54.7             | -8.8333                      | 8.8333   | 28.4600      | -8.7821                   | 8.7821   |
| 11        | 52           | 57.1             | -4.8333                      | 4.8333   | 29.7100      | -4.7756                   | 4.7756   |
| min       | 52           | 52.1             | -13.1667                     | 1.6667   | 27.1100      | -13.1090                  | 1.6346   |
| mean      | 52           | 56.6             | -5.6818                      | 6.8939   | 29.4309      | -5.6702                   | 6.8881   |
| max       | 52           | 63.0             | 5.0000                       | 13.1667  | 32.7800      | 5.0641                    | 13.1090  |

**Table S6.** Accuracy assessment of step length and distance. *Method B - mode 4.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 47.3             | -21.1667                     | 21.1667  | 24.6100      | -21.1218                  | 21.1218  |
| 2         | 52           | 47.0             | -21.6667                     | 21.6667  | 24.4500      | -21.6346                  | 21.6346  |
| 3         | 52           | 49.9             | -16.8333                     | 16.8333  | 25.9700      | -16.7628                  | 16.7628  |
| 4         | 52           | 54.3             | -9.5000                      | 9.5000   | 28.2200      | -9.5513                   | 9.5513   |
| 5         | 52           | 50.8             | -15.3333                     | 15.3333  | 26.4300      | -15.2885                  | 15.2885  |
| 6         | 52           | 50.4             | -16.0000                     | 16.0000  | 26.2200      | -15.9615                  | 15.9615  |
| 7         | 52           | 51.1             | -14.8333                     | 14.8333  | 26.5900      | -14.7756                  | 14.7756  |
| 8         | 52           | 45.0             | -25.0000                     | 25.0000  | 23.4000      | -25.0000                  | 25.0000  |
| 9         | 52           | 44.7             | -25.5000                     | 25.5000  | 23.2200      | -25.5769                  | 25.5769  |
| 10        | 52           | 49.3             | -17.8333                     | 17.8333  | 25.6100      | -17.9167                  | 17.9167  |
| 11        | 52           | 51.1             | -14.8333                     | 14.8333  | 26.5500      | -14.9038                  | 14.9038  |
| min       | 52           | 44.7             | -25.5000                     | 9.5000   | 23.2200      | -25.5769                  | 9.5513   |
| mean      | 52           | 49.2             | -18.0455                     | 18.0455  | 25.5700      | -18.0449                  | 18.0449  |
| max       | 52           | 54.3             | -9.5000                      | 25.5000  | 28.2200      | -9.5513                   | 25.5769  |

**Table S7.** Accuracy assessment of step length and distance. *Method B - mode 5.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 58.2             | -3.0000                      | 3.0000   | 30.2800      | -2.9487                   | 2.9487   |
| 2         | 52           | 61.3             | 2.1667                       | 2.1667   | 31.8900      | 2.2115                    | 2.2115   |
| 3         | 52           | 60.6             | 1.0000                       | 1.0000   | 31.5200      | 1.0256                    | 1.0256   |
| 4         | 52           | 63.8             | 6.3333                       | 6.3333   | 33.1900      | 6.3782                    | 6.3782   |
| 5         | 52           | 65.2             | 8.6667                       | 8.6667   | 33.9100      | 8.6859                    | 8.6859   |
| 6         | 52           | 65.3             | 8.8333                       | 8.8333   | 33.9600      | 8.8462                    | 8.8462   |
| 7         | 52           | 64.1             | 6.8333                       | 6.8333   | 33.7000      | 8.0128                    | 8.0128   |
| 8         | 52           | 57.1             | -4.8333                      | 4.8333   | 29.6900      | -4.8397                   | 4.8397   |
| 9         | 52           | 57.2             | -4.6667                      | 4.6667   | 29.7600      | -4.6154                   | 4.6154   |
| 10        | 52           | 61.4             | 2.3333                       | 2.3333   | 31.9100      | 2.2756                    | 2.2756   |
| 11        | 52           | 57.2             | -4.6667                      | 4.6667   | 29.7600      | -4.6154                   | 4.6154   |
| min       | 52           | 57.1             | -4.8333                      | 1.0000   | 29.6900      | -4.8397                   | 1.0256   |
| mean      | 52           | 61.0             | 1.7273                       | 4.8485   | 31.7791      | 1.8561                    | 4.9505   |
| max       | 52           | 65.3             | 8.8333                       | 8.8333   | 33.9600      | 8.8462                    | 8.8462   |

**Table S8.** Accuracy assessment of step length and distance. *Method B - mode anthropometric.*

| Subj. No. | No. of Steps | Step Length [cm] | Step Length Accuracy Error % |          | Distance [m] | Distance Accuracy Error % |          |
|-----------|--------------|------------------|------------------------------|----------|--------------|---------------------------|----------|
|           |              |                  | Relative                     | Absolute |              | Relative                  | Absolute |
| Reference | 52           | 60.0             | Relative                     | Absolute | 31.2000      | Relative                  | Absolute |
| 1         | 52           | 57.1             | -4.8333                      | 4.8333   | 29.7200      | -4.7436                   | 4.7436   |
| 2         | 52           | 57.3             | -4.5000                      | 4.5000   | 29.8100      | -4.4551                   | 4.4551   |
| 3         | 52           | 59.9             | -0.1667                      | 0.1667   | 31.1400      | -0.1923                   | 0.1923   |
| 4         | 52           | 65.7             | 9.5000                       | 9.5000   | 34.1700      | 9.5192                    | 9.5192   |
| 5         | 52           | 60.7             | 1.1667                       | 1.1667   | 31.5400      | 1.0897                    | 1.0897   |
| 6         | 52           | 61.2             | 2.0000                       | 2.0000   | 31.8400      | 2.0513                    | 2.0513   |
| 7         | 52           | 61.3             | 2.1667                       | 2.1667   | 31.8500      | 2.0833                    | 2.0833   |
| 8         | 52           | 55.9             | -6.8333                      | 6.8333   | 29.0800      | -6.7949                   | 6.7949   |
| 9         | 52           | 58.0             | -3.3333                      | 3.3333   | 30.1800      | -3.2692                   | 3.2692   |
| 10        | 52           | 58.9             | -1.8333                      | 1.8333   | 30.6100      | -1.8910                   | 1.8910   |
| 11        | 52           | 62.6             | 4.3333                       | 4.3333   | 32.5600      | 4.3590                    | 4.3590   |
| min       | 52           | 55.9             | -6.8333                      | 0.1667   | 29.0800      | -6.7949                   | 0.1923   |
| mean      | 52           | 59.9             | -0.2121                      | 3.6970   | 31.1364      | -0.2040                   | 3.6772   |
| max       | 52           | 65.7             | 9.5000                       | 9.5000   | 34.1700      | 9.5192                    | 9.5192   |

**Table S9.** Walking Time accuracy assessment.\*

| Subj. No. | Mean Model Time [s] | Mean Operator Time [s] | Relative Error % | Absolute Error % |
|-----------|---------------------|------------------------|------------------|------------------|
| 1         | 29.01               | 29.01                  | 0.0000           | 0.0000           |
| 2         | 29.69               | 29.40                  | 0.9864           | 0.9864           |
| 3         | 30.88               | 30.65                  | 0.7504           | 0.7504           |
| 4         | 31.16               | 31.01                  | 0.4837           | 0.4837           |
| 5         | 34.29               | 33.98                  | 0.9123           | 0.9123           |
| 6         | 33.03               | 33.03                  | 0.0000           | 0.0000           |
| 7         | 29.46               | 29.12                  | 1.1676           | 1.1676           |
| 8         | 29.96               | 29.81                  | 0.5032           | 0.5032           |
| 9         | 27.60               | 27.64                  | -0.1447          | 0.1447           |
| 10        | 31.74               | 31.97                  | -0.7194          | 0.7194           |
| 11        | 29.10               | 28.70                  | 1.3937           | 1.3937           |
| min       | 27.60               | 27.64                  | -0.7194          | 0.0000           |
| mean      | 30.54               | 30.39                  | 0.4848           | 0.6420           |
| max       | 34.29               | 33.98                  | 1.3937           | 1.3937           |

\* Note: *method A* and *method B* have the same values to be compared with the operator's measurements.

**Table S10.** Data of Walking Time (T) and velocity V from all the processing methods (A. B0. B1. B2. B3. B4. B5. B<sub>anthropometric</sub>).

| Subj. No. | T [s] | V [m/s]   |        |        |        |        |        |        |        |        |
|-----------|-------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
|           |       | reference | A      | B0     | B1     | B2     | B3     | B4     | B5     | BAnth  |
| 1         | 29.01 | 1.0755    | 0.8835 | 1.0000 | 1.0214 | 1.0438 | 1.0203 | 0.8483 | 1.0438 | 1.0245 |
| 2         | 29.69 | 1.0509    | 1.0997 | 1.0694 | 1.0263 | 1.0741 | 1.0010 | 0.8235 | 1.0741 | 1.0040 |
| 3         | 30.88 | 1.0104    | 0.9838 | 0.9517 | 0.9770 | 1.0207 | 0.9556 | 0.8410 | 1.0207 | 1.0084 |
| 4         | 31.16 | 1.0013    | 1.0286 | 0.9990 | 0.9807 | 1.0453 | 1.0177 | 0.9056 | 1.0651 | 1.0966 |
| 5         | 34.29 | 0.9099    | 0.9843 | 0.9563 | 0.9038 | 0.9840 | 0.7906 | 0.7708 | 0.9889 | 0.9198 |
| 6         | 33.03 | 0.9446    | 1.0503 | 1.0282 | 0.9340 | 1.0197 | 0.8365 | 0.7938 | 1.0282 | 0.9640 |
| 7         | 29.46 | 1.0591    | 0.9647 | 1.1439 | 1.0462 | 1.1382 | 1.1127 | 0.9026 | 1.1439 | 1.0811 |
| 8         | 29.96 | 1.0414    | 0.8652 | 0.9399 | 0.9826 | 0.9910 | 0.9302 | 0.7810 | 0.9910 | 0.9706 |
| 9         | 27.60 | 1.1304    | 1.0975 | 1.0783 | 1.0783 | 1.0783 | 1.0739 | 0.8413 | 1.0783 | 1.0935 |
| 10        | 31.74 | 0.9830    | 0.9515 | 0.9313 | 0.9619 | 1.0054 | 0.8967 | 0.8069 | 1.0054 | 0.9644 |
| 11        | 29.10 | 1.0722    | 1.0027 | 0.9612 | 0.9900 | 1.0189 | 1.0210 | 0.9124 | 1.0227 | 1.1189 |
| min       | 27.60 | 0.9099    | 0.8652 | 0.9313 | 0.9038 | 0.9840 | 0.7906 | 0.7708 | 0.9889 | 0.9198 |
| mean      | 30.54 | 1.0253    | 0.9920 | 1.0054 | 0.9911 | 1.0381 | 0.9687 | 0.8388 | 1.0420 | 1.0223 |
| max       | 34.29 | 1.1304    | 1.0997 | 1.1439 | 1.0783 | 1.1382 | 1.1127 | 0.9124 | 1.1439 | 1.1189 |

**Table S11.** Data of frequency of steps  $F_{\text{step}}$  and frequency of strides  $F_{\text{stride}}$  for *methods A and B* with respect to reference values.

| Subj. No. | T [s] | V <sub>reference</sub> [m/s] | F <sub>step_reference</sub> [Step/s] | F <sub>stride_reference</sub> [Stride/s] | AF <sub>step</sub> [Step/s] | AF <sub>stride</sub> [Stride/s] | BF <sub>step</sub> [Step/s] | BF <sub>stride</sub> [Stride/s] |
|-----------|-------|------------------------------|--------------------------------------|--|-----------------------------|---------------------------------|-----------------------------|---------------------------------|
| reference |       |                              |                                      |  |                             |                                 |                             |                                 |
| 1         | 29.01 | 1.0755                       | 1.7925                               | 0.8962                                   | 1.8614                      | 0.9307                          | 1.7925                      | 0.8962                          |
| 2         | 29.69 | 1.0509                       | 1.7514                               | 0.8757                                   | 1.8188                      | 0.9094                          | 1.7514                      | 0.8757                          |
| 3         | 30.88 | 1.0104                       | 1.6839                               | 0.8420                                   | 1.7487                      | 0.8744                          | 1.6839                      | 0.8420                          |
| 4         | 31.16 | 1.0013                       | 1.6688                               | 0.8344                                   | 1.6688                      | 0.8344                          | 1.6688                      | 0.8344                          |
| 5         | 34.29 | 0.9099                       | 1.5165                               | 0.7582                                   | 1.5456                      | 0.7728                          | 1.5165                      | 0.7582                          |
| 6         | 33.03 | 0.9446                       | 1.5743                               | 0.7872                                   | 1.6349                      | 0.8174                          | 1.5743                      | 0.7872                          |
| 7         | 29.46 | 1.0591                       | 1.7651                               | 0.8826                                   | 1.7990                      | 0.8995                          | 1.7651                      | 0.8826                          |
| 8         | 29.96 | 1.0414                       | 1.7356                               | 0.8678                                   | 1.7356                      | 0.8678                          | 1.7356                      | 0.8678                          |
| 9         | 27.60 | 1.1304                       | 1.8841                               | 0.9420                                   | 1.9928                      | 0.9964                          | 1.8841                      | 0.9420                          |
| 10        | 31.74 | 0.9830                       | 1.6383                               | 0.8192                                   | 1.7013                      | 0.8507                          | 1.6383                      | 0.8192                          |
| 11        | 29.10 | 1.0722                       | 1.7869                               | 0.8935                                   | 1.7869                      | 0.8935                          | 1.7869                      | 0.8935                          |
| min       | 27.60 | 0.9099                       | 1.5165                               | 0.7582                                   | 1.5456                      | 0.7728                          | 1.5165                      | 0.7582                          |
| mean      | 30.54 | 1.0253                       | 1.7089                               | 0.8544                                   | 1.7540                      | 0.8770                          | 1.7089                      | 0.8544                          |
| max       | 34.29 | 1.1304                       | 1.8841                               | 0.9420                                   | 1.9928                      | 0.9964                          | 1.8841                      | 0.9420                          |

**Table 12.** Data of relative percentage error of gait speed for all the processing methods (A. B0. B1. B2. B3. B4. B5. B<sub>anthropometric</sub>).

| Subj. No. | Relative % error |          |         |         |          |          |         |         |
|-----------|------------------|----------|---------|---------|----------|----------|---------|---------|
|           | A                | B0       | B1      | B2      | B3       | B4       | B5      | BAnth   |
| 1         | -17.8526         | -7.0192  | -5.0321 | -2.9487 | -5.1282  | -21.1218 | -2.9487 | -4.7436 |
| 2         | 4.6474           | 1.7628   | -2.3397 | 2.2115  | -4.7436  | -21.6346 | 2.2115  | -4.4551 |
| 3         | -2.6282          | -5.8013  | -3.3013 | 1.0256  | -5.4167  | -16.7628 | 1.0256  | -0.1923 |
| 4         | 2.7244           | -0.2244  | -2.0513 | 4.3910  | 1.6346   | -9.5513  | 6.3782  | 9.5192  |
| 5         | 8.1731           | 5.0962   | -0.6731 | 8.1410  | -13.1090 | -15.2885 | 8.6859  | 1.0897  |
| 6         | 11.1859          | 8.8462   | -1.1218 | 7.9487  | -11.4423 | -15.9615 | 8.8462  | 2.0513  |
| 7         | -8.9103          | 8.0128   | -1.2179 | 7.4679  | 5.0641   | -14.7756 | 8.0128  | 2.0833  |
| 8         | -16.9231         | -9.7436  | -5.6410 | -4.8397 | -10.6731 | -25.0000 | -4.8397 | -6.7949 |
| 9         | -2.9167          | -4.6154  | -4.6154 | -4.6154 | -5.0000  | -25.5769 | -4.6154 | -3.2692 |
| 10        | -3.2051          | -5.2564  | -2.1474 | 2.2756  | -8.7821  | -17.9167 | 2.2756  | -1.8910 |
| 11        | -6.4744          | -10.3526 | -7.6603 | -4.9679 | -4.7756  | -14.9038 | -4.6154 | 4.3590  |
| min       | -17.8526         | -10.3526 | -7.6603 | -4.9679 | -13.1090 | -25.5769 | -4.8397 | -6.7949 |
| mean      | -2.9254          | -1.7541  | -3.2547 | 1.4627  | -5.6702  | -18.0449 | 1.8561  | -0.2040 |
| max       | 11.1859          | 8.8462   | -0.6731 | 8.1410  | 5.0641   | -9.5513  | 8.8462  | 9.5192  |

**Table 13.** Data of absolute percentage error of gait speed for all the processing methods (A. B0. B1. B2. B3. B4. B5. B<sub>anthropometric</sub>).

| Subj. No. | Absolute % error |         |        |        |         |         |        |        |
|-----------|------------------|---------|--------|--------|---------|---------|--------|--------|
|           | A                | B0      | B1     | B2     | B3      | B4      | B5     | BAnth  |
| 1         | 17.8526          | 7.0192  | 5.0321 | 2.9487 | 5.1282  | 21.1218 | 2.9487 | 4.7436 |
| 2         | 4.6474           | 1.7628  | 2.3397 | 2.2115 | 4.7436  | 21.6346 | 2.2115 | 4.4551 |
| 3         | 2.6282           | 5.8013  | 3.3013 | 1.0256 | 5.4167  | 16.7628 | 1.0256 | 0.1923 |
| 4         | 2.7244           | 0.2244  | 2.0513 | 4.3910 | 1.6346  | 9.5513  | 6.3782 | 9.5192 |
| 5         | 8.1731           | 5.0962  | 0.6731 | 8.1410 | 13.1090 | 15.2885 | 8.6859 | 1.0897 |
| 6         | 11.1859          | 8.8462  | 1.1218 | 7.9487 | 11.4423 | 15.9615 | 8.8462 | 2.0513 |
| 7         | 8.9103           | 8.0128  | 1.2179 | 7.4679 | 5.0641  | 14.7756 | 8.0128 | 2.0833 |
| 8         | 16.9231          | 9.7436  | 5.6410 | 4.8397 | 10.6731 | 25.0000 | 4.8397 | 6.7949 |
| 9         | 2.9167           | 4.6154  | 4.6154 | 4.6154 | 5.0000  | 25.5769 | 4.6154 | 3.2692 |
| 10        | 3.2051           | 5.2564  | 2.1474 | 2.2756 | 8.7821  | 17.9167 | 2.2756 | 1.8910 |
| 11        | 6.4744           | 10.3526 | 7.6603 | 4.9679 | 4.7756  | 14.9038 | 4.6154 | 4.3590 |
| min       | 2.6282           | 0.2244  | 0.6731 | 1.0256 | 1.6346  | 9.5513  | 1.0256 | 0.1923 |
| mean      | 7.7855           | 6.0664  | 3.2547 | 4.6212 | 6.8881  | 18.0449 | 4.9505 | 3.6772 |
| max       | 17.8526          | 10.3526 | 7.6603 | 8.1410 | 13.1090 | 25.5769 | 8.8462 | 9.5192 |

**Table 14.** Data of base of support area in standing (AS [m<sup>2</sup>]) and base of support area while walking (AW [m<sup>2</sup>]) obtained from data processing with *Method B* for the processing methods B0. B1. B2. B3. B4. B5.

| Subj. No. | AS     | AW B0  | AW B1  | AW B2  | AW B3  | AW B4  | AW B5  |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| 1         | 0.1162 | 0.1432 | 0.1436 | 0.1430 | 0.1430 | 0.1464 | 0.1430 |
| 2         | 0.0702 | 0.1196 | 0.1211 | 0.1198 | 0.1208 | 0.1199 | 0.1198 |
| 3         | 0.1298 | 0.1481 | 0.1482 | 0.1491 | 0.1483 | 0.1461 | 0.1491 |
| 4         | 0.1224 | 0.1590 | 0.1586 | 0.1597 | 0.1598 | 0.1576 | 0.1593 |
| 5         | 0.1004 | 0.1442 | 0.1445 | 0.1427 | 0.1384 | 0.1378 | 0.1427 |
| 6         | 0.1026 | 0.1375 | 0.1382 | 0.1385 | 0.1370 | 0.1366 | 0.1375 |
| 7         | 0.1080 | 0.1538 | 0.1542 | 0.1535 | 0.1541 | 0.1525 | 0.1538 |
| 8         | 0.0931 | 0.1208 | 0.1216 | 0.1218 | 0.1207 | 0.1259 | 0.1218 |
| 9         | 0.0775 | 0.1137 | 0.1137 | 0.1137 | 0.1136 | 0.1189 | 0.1137 |
| 10        | 0.0988 | 0.1537 | 0.1535 | 0.1522 | 0.1493 | 0.1473 | 0.1522 |
| 11        | 0.1125 | 0.1546 | 0.1554 | 0.1550 | 0.1551 | 0.1535 | 0.1551 |
| min       | 0.0702 | 0.1137 | 0.1137 | 0.1137 | 0.1136 | 0.1189 | 0.1137 |
| mean      | 0.1029 | 0.1407 | 0.1411 | 0.1408 | 0.1400 | 0.1402 | 0.1407 |
| max       | 0.1298 | 0.1590 | 0.1586 | 0.1597 | 0.1598 | 0.1576 | 0.1593 |



**Table 15.** Data of AR = AW/AS obtained from data processing with *Method B* for the processing methods *B0. B1. B2. B3. B4. B5.*

| Subj. No. | AR B0  | AR B1  | AR B2  | AR B3  | AR B4  | AR B5  |
|-----------|--------|--------|--------|--------|--------|--------|
| 1         | 1.2324 | 1.2358 | 1.2306 | 1.2306 | 1.2599 | 1.2306 |
| 2         | 1.7037 | 1.7251 | 1.7066 | 1.7208 | 1.7080 | 1.7066 |
| 3         | 1.1410 | 1.1418 | 1.1487 | 1.1425 | 1.1256 | 1.1487 |
| 4         | 1.2990 | 1.2958 | 1.3047 | 1.3056 | 1.2876 | 1.3015 |
| 5         | 1.4363 | 1.4392 | 1.4213 | 1.3785 | 1.3725 | 1.4213 |
| 6         | 1.3402 | 1.3470 | 1.3499 | 1.3353 | 1.3314 | 1.3402 |
| 7         | 1.4241 | 1.4278 | 1.4213 | 1.4269 | 1.4120 | 1.4241 |
| 8         | 1.2975 | 1.3061 | 1.3083 | 1.2965 | 1.3523 | 1.3083 |
| 9         | 1.4671 | 1.4671 | 1.4671 | 1.4658 | 1.5342 | 1.4671 |
| 10        | 1.5557 | 1.5536 | 1.5405 | 1.5111 | 1.4909 | 1.5405 |
| 11        | 1.3742 | 1.3813 | 1.3778 | 1.3787 | 1.3644 | 1.3787 |
| min       | 1.1410 | 1.1418 | 1.1487 | 1.1425 | 1.1256 | 1.1487 |
| mean      | 1.3883 | 1.3928 | 1.3888 | 1.3811 | 1.3853 | 1.3879 |
| max       | 1.7037 | 1.7251 | 1.7066 | 1.7208 | 1.7080 | 1.7066 |

**Table 16.** Data of step width in standing (LS [cm]) and step width while walking (LW [cm]) obtained from data processing with *Method B* for the processing methods *B0. B1. B2. B3. B4. B5.*

| Subj. No. | LS      | LW B0   | LW B1   | LW B2   | LW B3   | LW B4   | LW B5   |
|-----------|---------|---------|---------|---------|---------|---------|---------|
| 1         | 30.5000 | 18.2300 | 17.8900 | 17.2000 | 17.9100 | 22.7100 | 17.2000 |
| 2         | 17.5000 | 15.4200 | 16.8300 | 15.3900 | 17.1700 | 20.3000 | 15.3900 |
| 3         | 33.5000 | 19.5800 | 19.0700 | 18.4500 | 19.5800 | 21.2300 | 18.4500 |
| 4         | 30.5000 | 20.5700 | 20.8600 | 19.7900 | 20.4200 | 22.1800 | 19.1800 |
| 5         | 27.0000 | 21.1500 | 22.4500 | 19.9800 | 22.8100 | 23.0400 | 19.8700 |
| 6         | 28.5000 | 18.4600 | 28.5000 | 19.0000 | 22.5400 | 23.3500 | 18.4600 |
| 7         | 25.0000 | 16.4900 | 18.6800 | 16.5300 | 17.2600 | 21.1000 | 16.4900 |
| 8         | 27.0000 | 17.7100 | 17.0900 | 16.9800 | 17.8700 | 23.1100 | 16.9800 |
| 9         | 22.0000 | 15.8600 | 15.8600 | 15.8600 | 15.9300 | 22.4900 | 15.8600 |
| 10        | 23.0000 | 21.3800 | 20.6500 | 19.2500 | 20.6200 | 21.9100 | 19.2500 |
| 11        | 26.0000 | 19.4200 | 19.0800 | 18.3100 | 18.2900 | 20.0900 | 18.2800 |
| min       | 17.5000 | 15.4200 | 15.8600 | 15.3900 | 15.9300 | 20.0900 | 15.3900 |
| mean      | 26.4091 | 18.5700 | 19.7236 | 17.8855 | 19.1273 | 21.9555 | 17.7645 |
| max       | 33.5000 | 21.3800 | 28.5000 | 19.9800 | 22.8100 | 23.3500 | 19.8700 |

**Table 17.** Data of LR = LW/LS obtained from data processing with *Method B* for the processing methods *B0. B1. B2. B3. B4. B5.*

| <b>Subj. No.</b> | <b>LR B0</b> | <b>LR B1</b> | <b>LR B2</b> | <b>LR B3</b> | <b>LR B4</b> | <b>LR B5</b> |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1                | 0.5977       | 0.5866       | 0.5639       | 0.5872       | 0.7446       | 0.5639       |
| 2                | 0.8811       | 0.9617       | 0.8794       | 0.9811       | 1.1600       | 0.8794       |
| 3                | 0.5845       | 0.5693       | 0.5507       | 0.5845       | 0.6337       | 0.5507       |
| 4                | 0.6744       | 0.6839       | 0.6489       | 0.6695       | 0.7272       | 0.6289       |
| 5                | 0.7833       | 0.8315       | 0.7400       | 0.8448       | 0.8533       | 0.7359       |
| 6                | 0.6477       | 1.0000       | 0.6667       | 0.7909       | 0.8193       | 0.6477       |
| 7                | 0.6596       | 0.7472       | 0.6612       | 0.6904       | 0.8440       | 0.6596       |
| 8                | 0.6559       | 0.6330       | 0.6289       | 0.6619       | 0.8559       | 0.6289       |
| 9                | 0.7209       | 0.7209       | 0.7209       | 0.7241       | 1.0223       | 0.7209       |
| 10               | 0.9296       | 0.8978       | 0.8370       | 0.8965       | 0.9526       | 0.8370       |
| 11               | 0.7469       | 0.7338       | 0.7042       | 0.7035       | 0.7727       | 0.7031       |
| min              | 0.5845       | 0.5693       | 0.5507       | 0.5845       | 0.6337       | 0.5507       |
| mean             | 0.7165       | 0.7605       | 0.6911       | 0.7395       | 0.8532       | 0.6869       |
| max              | 0.9296       | 1.0000       | 0.8794       | 0.9811       | 1.1600       | 0.8794       |