# Raw Data

The raw data is added as a zip file. There is a folder for each subject. In this folder, the files Subject[subjnr]\_Trial[trialnr].txt, which contain the marker and force plate data for the specific trial of the specific subject. The other files can be used for inertial compensation. The files Trial[trialnr]\_unloaded.txt contain ground reaction force data of an unloaded trial with markers on the treadmill. The files Trial[trialnr]\_acc\_[loaded/unloaded].txt contain accelerometer data of the loaded (with participant) and unloaded trials.

# Processed Data

MetRate\_Subject[subjnr].mat contains the structure MetRate, which is the metabolic rate in W/kg for the resting trial and the walking trials. Walk denotes the 1.3 m/s trials, and slow the 0.8 m/s trials. Positive indicates the uphill trials, negative the downhill trials.

MetabolicCostData.mat contains the structure MetCost in J/kg/m, with the metabolic cost for each subject, for each model and the experiment, for each trial. The structure has the same set-up for the trials as the structure MetRate.

KinData.mat contains the structure KinData, which contains the joint angles, velocities, moments, ground reaction forces, muscle contractile element length, activation, and stimulation of the average gait cycle for each subject. The meaning of the trial numbers is detailed below. All trials are split up into 100 nodes.

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| --- | --- |
| Trial 1 | Level, 1.3 m/s |
| Trial 2 | Level, 0.8 m/s |
| Trial 3 | Uphill, 1.3 m/s |
| Trial 4 | Uphill, 0.8 m/s |
| Trial 5 | Downhill, 1.3 m/s |
| Trial 6 | Downhill, 0.8 m/s |

The order of the angles, velocities, and moments is leg 1 hip – leg 1 knee – leg 1 ankle – leg 2 hip – leg 2 knee – leg 2 ankle. Flexion is positive for the hip and the knee, and dorsiflexion is positive for the ankle. The ground reaction forces start with the fore-aft ground reaction force, then the vertical ground reaction force, and the third column contains the moment.

The muscle data are in order: Iliopsoas – Gluteals – Hamstrings – Rectus Femoris – Vasti – Gastrocnemius – Soleus – Tibialis Anterior, and repeated for the other leg.