README for GSSL Data PLOS ONE
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Processed Individual Subject Data:
- These files are organized by subject
- Subj[#]_Cond[#]_GS[#]_SL[#]_Data.mat: data files by condition.
- Subj[#]_CompFig[#]_[Joint][Torques/Angles/GrndRxnForce].fig: Compiled mean torque, angle, or ground reaction force curves for specified subject for all conditions.
- Subj[#]_Cond[#]_GS[#]_SL[#]_Panel1: Continuous trial condition data curves
- Subj[#]_Cond[#]_GS[#]_SL[#]_Panel2: Segmented trial condition data curves normalized to gait cycle
- Subj[#]_Cond[#]_GS[#]_SL[#]_Panel3: Heat map for Segmented trial condition data curves normalized to gait cycle

TPA Step 1 Fit:
- Contains the pulse torque approximation scripts. Run this from the main script with the 15 condition files from each subject placed in the directory.
    - TPA_MainRun_Normalized.m: Main script.
    - TPA_ApproxWithPulses.m: Is a sub-function.
    - TPA_NormErr.m: Is a sub-function.

TPA Data Files:
- Subject[#]_Pulse[#]_PTAData_Normalized.mat: These are output data files from TPA Step 1 Fit, ready to be used in TPA Step 2 Graph, filed According to the pulse quantity used in approximation.

TPA Step 2 Graph:
- PTA_Analysis_Pulse1_Normalized.m: Runs analysis on all subject files labeled Subject[#]_Pulse1_PTAData_Normalized.mat when placed in directory
- PTA_Analysis_Pulse2_Normalized.m: Runs analysis on all subject files labeled Subject[#]_Pulse2_PTAData_Normalized.mat when placed in directory
- sigstar.m: sub-function used by the above two functions; places significance asterisks.

TLA-SL Analysis:
- STRIDE DATA: This folder contains data for calculating stride length for each subject.
- Subject[#]_TLA: These folders each contain a set of calculated TLA files, one for each condition.
- allSubjectGaitSpeed.txt: Compilation of gait speeds for all subjects
- Functions:
    - TLASL_Analysis_Main.m: This is the main script and can be run with all data files placed exactly as they are.
    - TLASL_ImportHeaders.m: Sub-function
    - TLASL_ImportSLData.m: Sub-function
    - TLASL_TLAImport.m: Subfunction

Froude Calculations:

- 20Subj_GS_Ht_LL_Data.mat: contains GS, Height, and leg length data for the full set of 20 subjects
- FroudeCalculation.m: Calculates the group Froude Numbers, ssGS, and Normalized ssGS (by LL). Also calculates CV values for each value, and plots Groupe Froude number results.

SL Calculations:

- [#]_stridelength: Stride length data for each subject
- allSubjectGaitSpeed.txt: gait speeds for all subjects
- leglength.txt: subject leg lengths
- Functions:
  - SL_StrideLengthCalc.m: Main script, calls the following two scripts in order to execute a group SL analysis.
  - SL_ImportColumns.m: sub-function
  - SL_ImportSLData.m: Sub-function

Continuum Analysis:

- This folder contains all necessary script to generate group curve figure and the pairwise comparison figures. In order to run the scripts, open the Main.m and specify the appropriate directory folder in line 17.