**Read Me**

This Figshare contains data behind the results of *Automatic methods of hoof-on and -off detection in horses using wearable inertial sensors during walk and trot on asphalt, sand and grass*.

**Gait Event Timings.xlsx**

Gait events were detected for a cohort of horses using inertial measurement units (IMUs) attached to the distal limbs- hooves, pasterns (proximal phalanges) and cannons (meta-carpal and -tarsals). The instances of gait events were detected using different methods applied to data collected from each of the IMUs under different surface conditions and gaits.

These instances are saved in the file *Gait event timings.xlsx* as Unix Timestamps (ms).

The name of each sheet of the workbook describes the condition to which that dataset belongs with naming convention:

surface type, limb, gait, gait event type

On each sheet, the columns are arranged:

HorseID Mref M1p M2p M1c M3c M4c

Where the methods are as described in Table 1

|  |  |  |  |
| --- | --- | --- | --- |
| **Method name** | **Description of method** | **IMU attachment** | **Signal used** |
| Mref | Reference method1 | Hooves | Resultant accelerations and angular velocity |
| M1p | First novel method applied to pasterns | Pasterns | Resultant acceleration |
| M2p | Second novel method applied to pasterns | Pasterns | Resultant angular velocity |
| M1c | First novel method applied to cannons | Cannons | Resultant acceleration |
| M3c | First state of the art method applied to cannons2 | Cannons | Angular velocities |
| M4c | Second state of the art method applied to cannons3 | Cannons | Euler angles and resultant acceleration |

*Table 1- description of the methods used to detect gait events (see associated paper for more details)*

HorseID refers to the horse for which the event was recorded.

Values in the column Mref are taken as the ground truth values.

NaN values indicate where a method missed a gait event or where a false positive was detected by one or more of the methods.

**References**

1. Tijssen et al. (2020), *PLoS ONE, 15(6): e02332*
2. Sapone et al. (2020), *Sensors*, 25(3): 469-74
3. Bragança et al. (2017), *Equine. Vet. J*., 49: 545-51