

Equine Limb Phasing System

Benefits

- Perfect tool to measure how a horse moves in its natural environment.
- Allows measurement in all gaits on different terrains and treadmill, with or without rider.
- Clinical application to assess and quantify the horse before and after treatment.
- Quantification of the benefit of training and helps identify areas for improvement.
- Allows for easy data collection and statistical validation.
- Minimal set-up time (unlike optical-based systems).
- Current and archived data can be compared, for an objective assessment of changes.
- CSV output to allow input to other programs.
- Operates for a whole day on one battery charge.
- Provides the following measurements of stride;
 - Stride duration (seconds)
 - Stride length (m)
 - Speed (m/s)
 - Gait
 - GPS position
 - Temporal phasing of all limbs (% of stride)



THE ETB-PEGASUS LIMB PHASING SYSTEM 'EG-1'

1) What is the limb phasing system?

It is a system that monitors the degree and timing of cannon swing for each leg within a stride. This gives us information on how the horse creates its stride: i.e. how quickly and how far away from each other each leg moves to produce the stride. As training focuses on altering the horses' stride to produce different levels of desired effects and movements, then leg patterns form an important landmark point.

2) Carrying out a trial

The system uses four sensors housed within four brushing boots and a GPS sensor that can be put on a rider's hat or on a horse's numnah if it is to be lunged/unridden. Once the sensors are turned on exercise can commence.

3) Analysing data

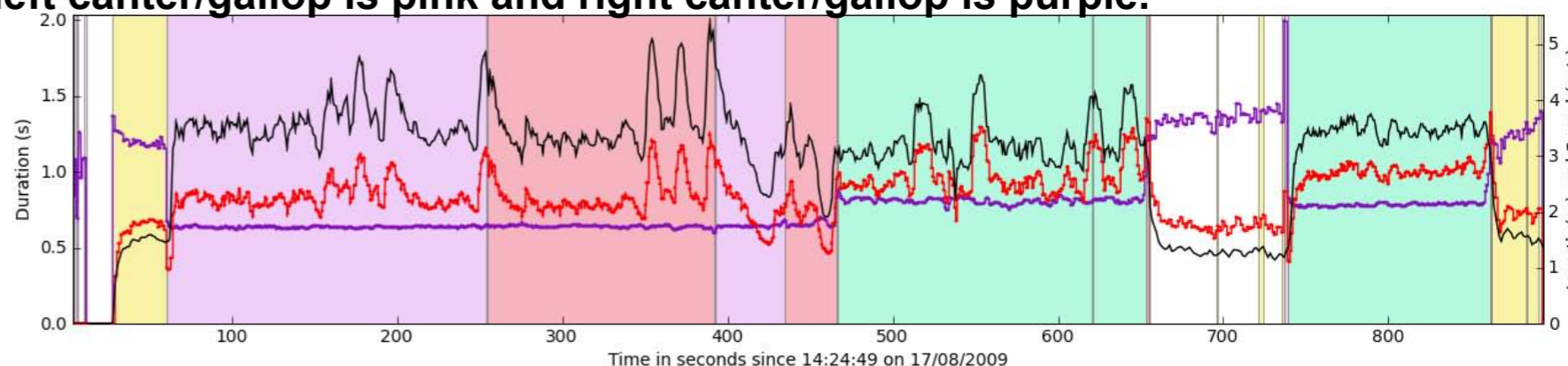
The sensor data is processed and all the parameters automatically presented, simply by connecting the sensors to the notebook and selecting "Analyse". Data is presented in two forms:

1. Statistical summary of each gait used by the horse
2. Graph of the entire trial and the ability to zoom in

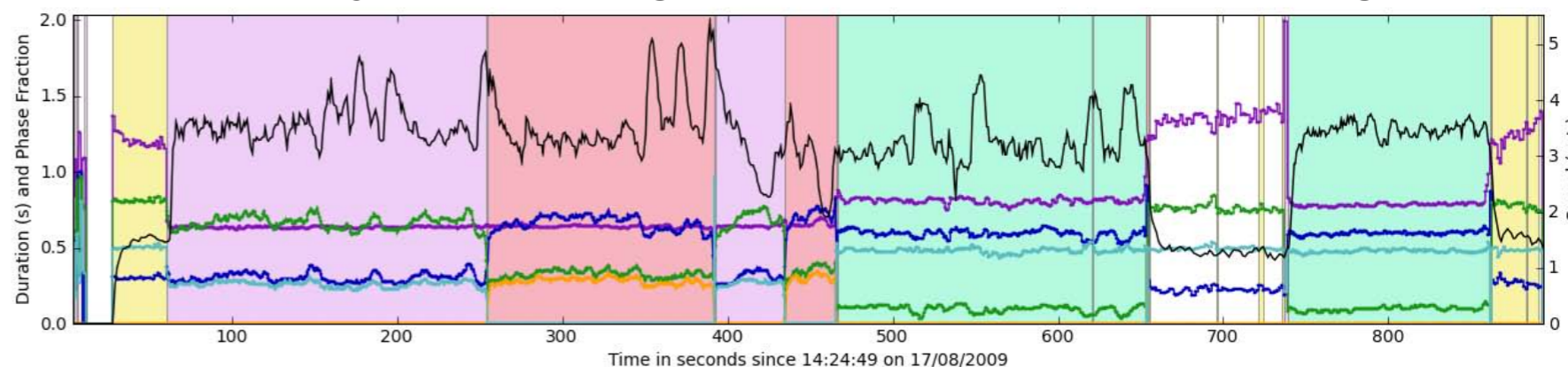
1) Summary table of each gait (only canter shown for demonstration purposes)

Left Canter/Gallop	Strides	Time (min:s)	Distance (m)
Total	263	2:50	589:0
	Average	Low	High
Left fore	68.20	63.10	70.80
Right fore	33.30	30.80	34.80
Left hind	28.80	26.90	30.30
Stride duration (s)	0.64	0.63	0.64
Speed (m/s)	3.33	3.20	3.60
Stride Length (m)	2.15	2.06	2.31
Right Canter/Gallop	Strides	Time (min:s)	Distance (m)
Total	374	4:00	829.7
	Average	Low	High
Left fore	29.70	27.70	32.80
Right fore	67.20	63.10	70.30
Right hind	26.20	24.60	27.70
Stride duration (s)	0.63	0.63	0.64
Speed (m/s)	3.50	3.29	3.71
Stride length (m)	2.23	2.10	2.36

2a) Graph of entire trial showing stride duration (purple line), speed (black) and stride length (red). Each gait is colour coded - yellow is walk, turquoise is trot, left canter/gallop is pink and right canter/gallop is purple.



2b) Graph of entire trial showing stride duration (purple line), speed (black) and each limb – LH is yellow, RH is light blue, LF is dark blue and RF is green.



A summary of the findings for the provided example.

This horse competed at Advanced Medium Dressage. In this test the rider was able to extend in trot and canter whilst maintaining a steady stride duration, as expected from a horse competing at this level. The limb phasing showed comparable stride data for the left and right rein canter and only a minor difference between the left and right rein canters on the coupled pair.

Some Applications

ETB's products give accurate and repeatable numerical information not currently otherwise obtainable across a wide spectrum of activities;

- Research, education, colleges, universities: a far greater depth of research is possible simply due to being able to use the system in real life situations, with or without a rider.
- Diagnosis: measurement of the stride profile to determine whether the horse has a normal symmetric gait pattern.
- Monitoring: after treatment, monitoring of recovery to ensure the horse is doing well, allowing for early corrective treatment.
- Training: teaching people how to train their horse to move more efficiently and effectively, e.g., training the elite horses where riders are looking for that extra 1% in performance.



Existing products & services.

ETB also operate a service where you can have trials carried out at your college or yard. Please call or email for details.

You may be interested in other products in the ETB-Pegasus range. See the web site for more up to date information www.etb-pegasus.org

