PEGASUS

Revolutionary Equine Cannon Angle Analysis

Benefits

- Perfect research tool to measure the cannon movement in the horse's natural environment.
- Allows measurement at walk and trot 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 or use of a training aid.
- Allows for easy data collection and statistical validation.
- Minimal set-up time (unlike optical-based systems).
- Frees the expert to concentrate on analysis rather than test supervision.
- 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;
  - Stride duration (seconds).
  - Temporal phasing of all limbs (% of stride).
  - Cannon angle with time, in both the sagittal (cranial caudal) and coronal (medio lateral) planes.

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INNOVATIVE MOTION PRODUCTS

Gait Analysis
Cannon Angle

THE ETB-PEGASUS CANNON ANGLE PROFILE SYSTEM ‘EA-1’

1) What is the cannon angle analysis System?

The system is a software upgrade to the ETB-Pegasus Limb Phasing System, adding considerable in depth analysis of the sagittal and coronal planes of movement for each of the four cannon bones.

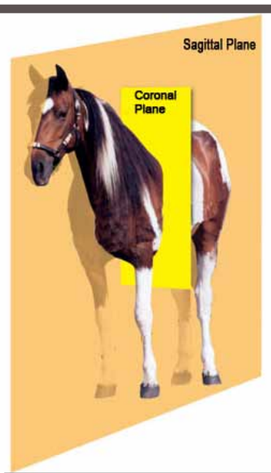
2) Carrying out a trial

As with the ETB-Pegasus Limb Phasing System, brushing boots with sensors are used. The horse stands still for 5 seconds to calibrate the sensors and then the trial begins. The trial can be a simple trot up in hand, exercise on a treadmill, ridden and/or un-ridden at walk and trot on any surface.

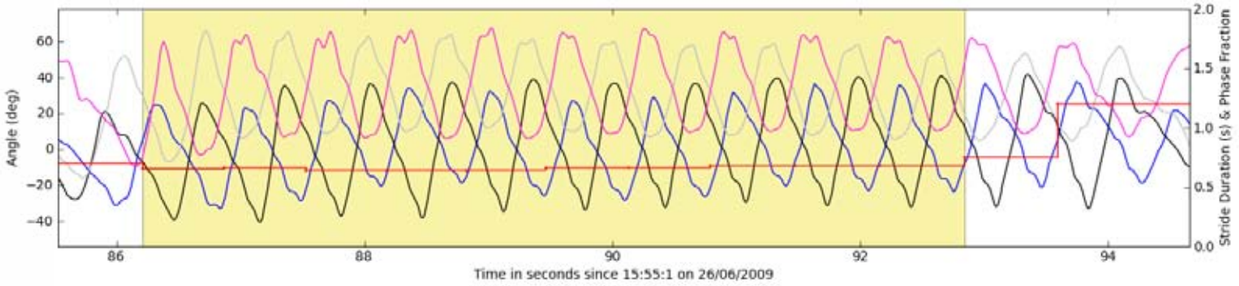
3) Analysing data

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 three forms:

1. A graph of the entire trial and the ability to zoom in.
2. One summary graph for each limb.
3. Summary statistical table.

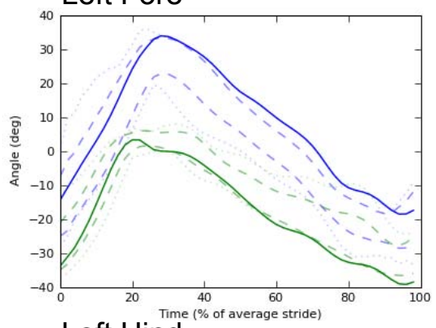


1) Zoomed in trot section of trial

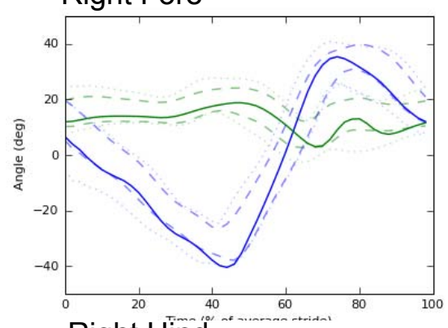


2) Summary graph for each limb

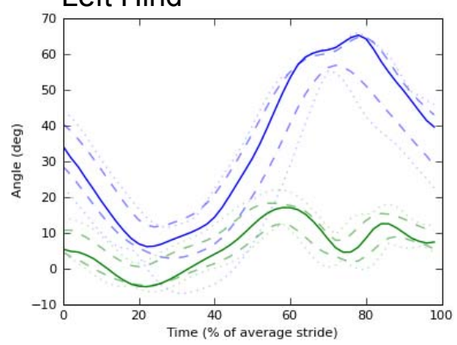
Left Fore



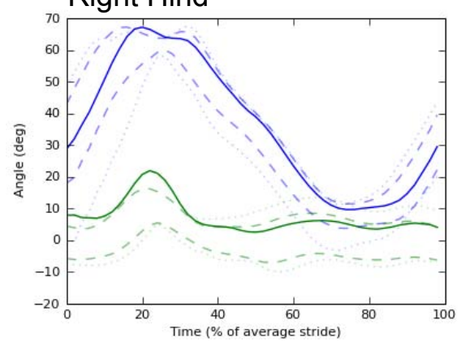
Right Fore



Left Hind



Right Hind



3) Automatically generated summary table

Region	Test: Horse 2, 3rd trot, soft tarmac												
Strides	10												
Average Duration (s)	0.66												
Minimum Duration (s)	0.64												
Maximum Duration (s)	0.68	LF	RF	LH	RH								
Average Phase %		0	49	38	71								
Minimum Phase %		0	47	36	0								
Maximum Phase %		0	52	40	91	LF S Angle	LF C Angle	RF S Angle	RF C Angle	LH S Angle	LH C Angle	RH S Angle	RH C Angle
Typical Peak to Peak (deg)						54.85	38.82	71.55	15.87	54.17	19.11	57.45	16.86
Minimum Peak to Peak (deg)						47.70	30.24	64.61	14.10	49.62	15.86	52.23	11.26
Maximum Peak to Peak (deg)						59.21	43.01	75.85	18.71	72.99	22.11	62.72	22.94

A summary of the findings for the provided example.

This horse had an uneven stride in trot in the fore limb cannon movement. When looking at the right fore limb there is predominately movement in the sagittal plane (blue line) and little movement in the coronal plane (green line is nearly horizontal), which is correct for a normal gait pattern. The left fore limb however has less sagittal plane movement and a lot of coronal plane movement (it is not horizontal at 0). This horse had a tendon injury on the left fore and accommodated this by swinging the limb out rather than under the body. The left and right hind have similar profiles, total sagittal plane angle and minimal movement in the coronal plane, indicating that the hind limb movement is symmetric.

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INNOVATIVE MOTION PRODUCTS

Some of the many 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 cannon 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

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