

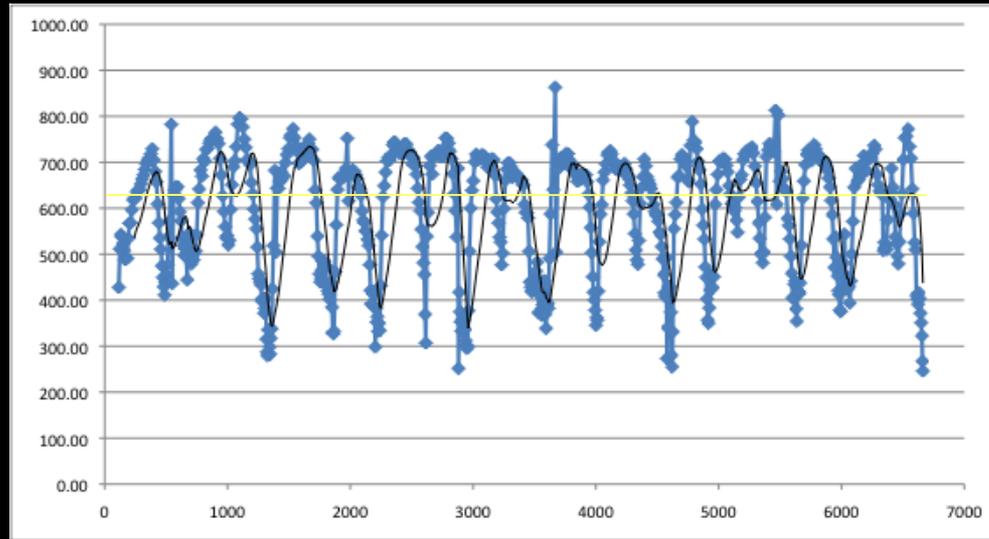
Absolute and Relative Speeds Measured on Cross Country During Eventing Competitions

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Reed Ayers Ph.D.

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- 150 rides measured so far
 - 14 Watches
 - 10 courses on across the US
 - This is a short synopsis using Rolex as the example of the complete data analysis being carried out for all measured rides
 - Area IX Young Riders are participating in the data collection and analysis

Data Analysis: Methodology

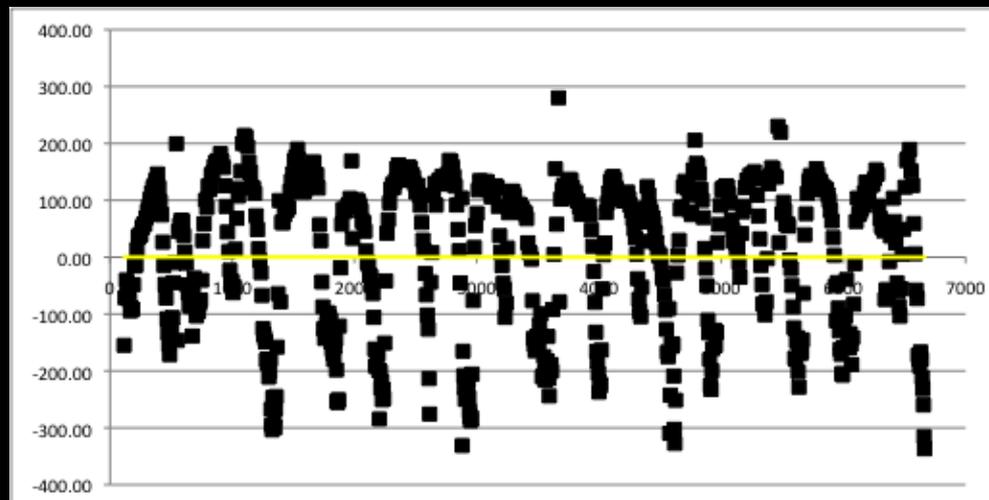
Example 1



Sara Dierks Rolex, 2009

Average speed (Yellow Line):
582.73 mpm

Time Faults: 0.0

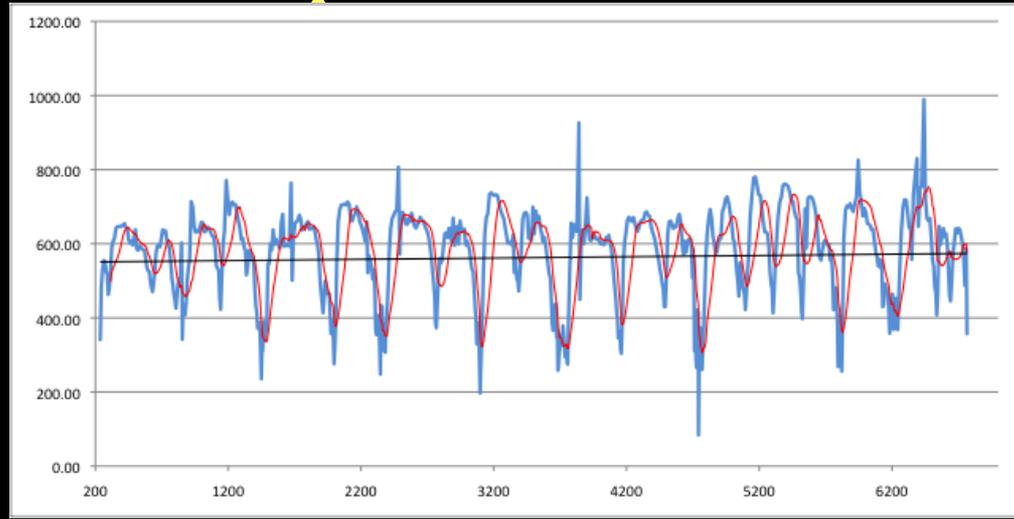


Variation of speed about the
measured mean

Average (Yellow Line): 0.000

Data Analysis: Methodology

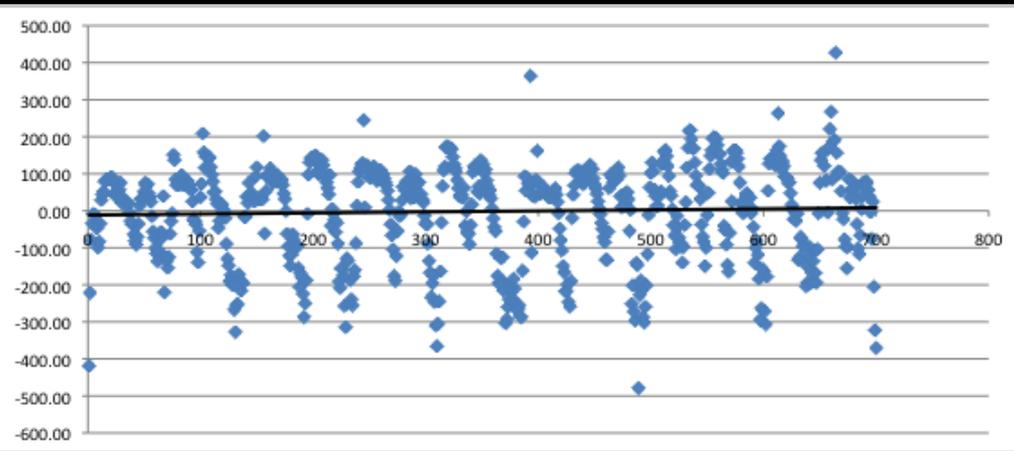
Example 2



Bonner Carpenter Rolex, 2009

Average speed (Black Line):
562.49 mpm

Time Faults: 11.6

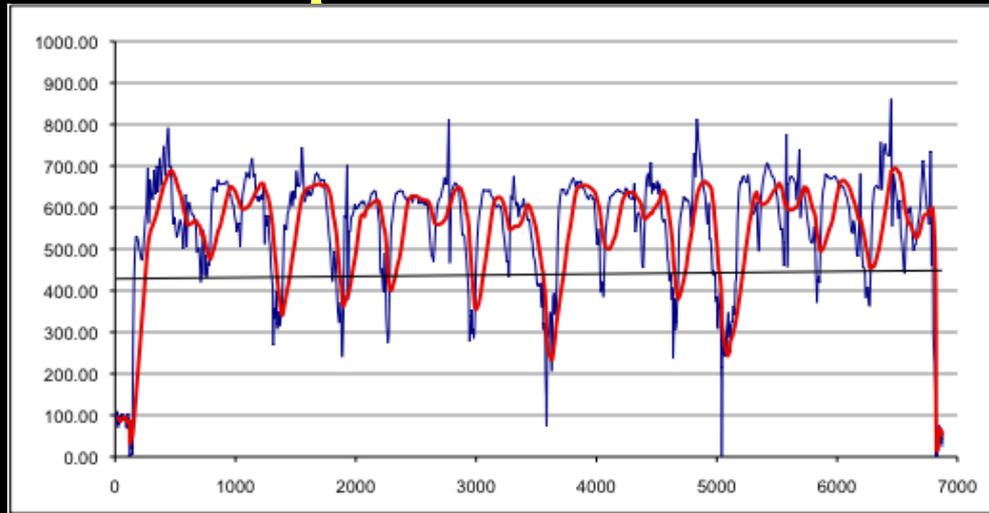


Variation of speed about the
measured mean

Average (Yellow Line): -6.756

Data Analysis: Methodology

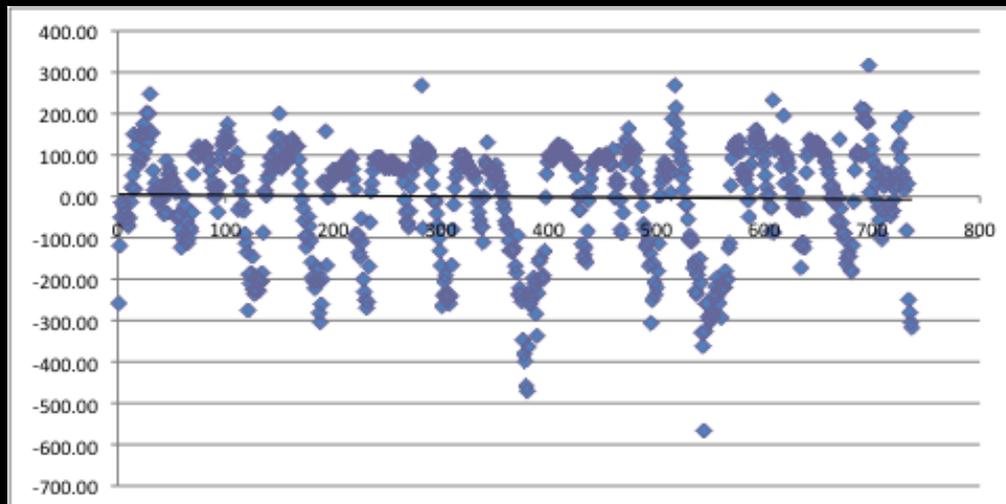
Example 3



Bruce Davidson Sr. Rolex, 2009

Average speed (Black Line):
544.31 mpm

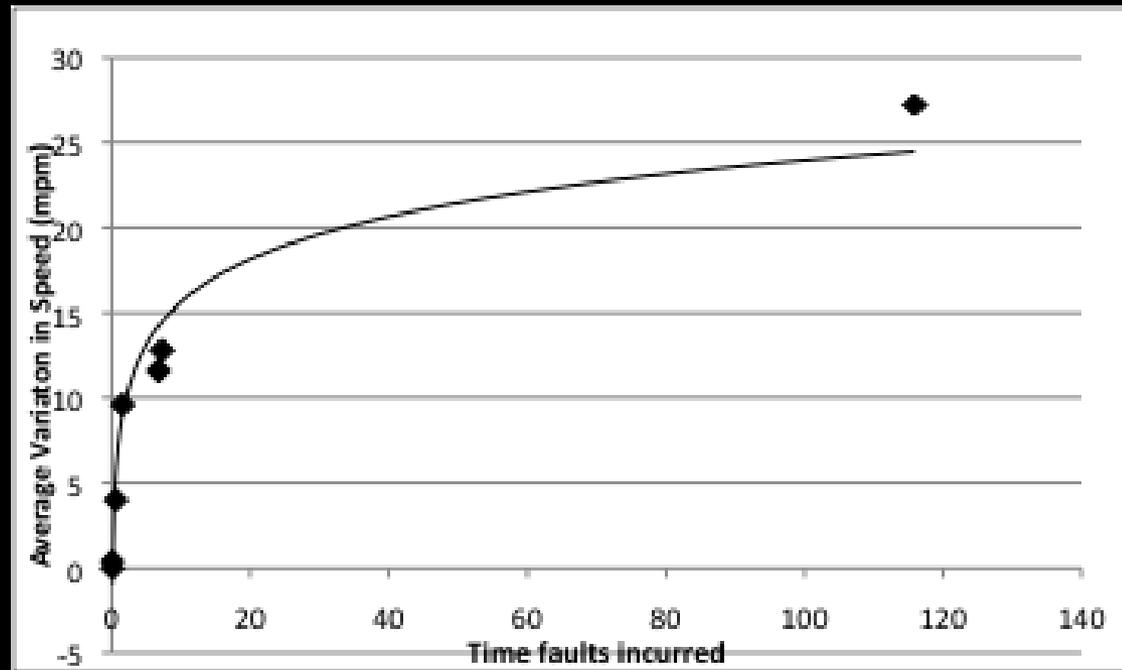
Time Faults: 9.6



Variation of speed about the
measured mean

Average (Black Line): -1.575

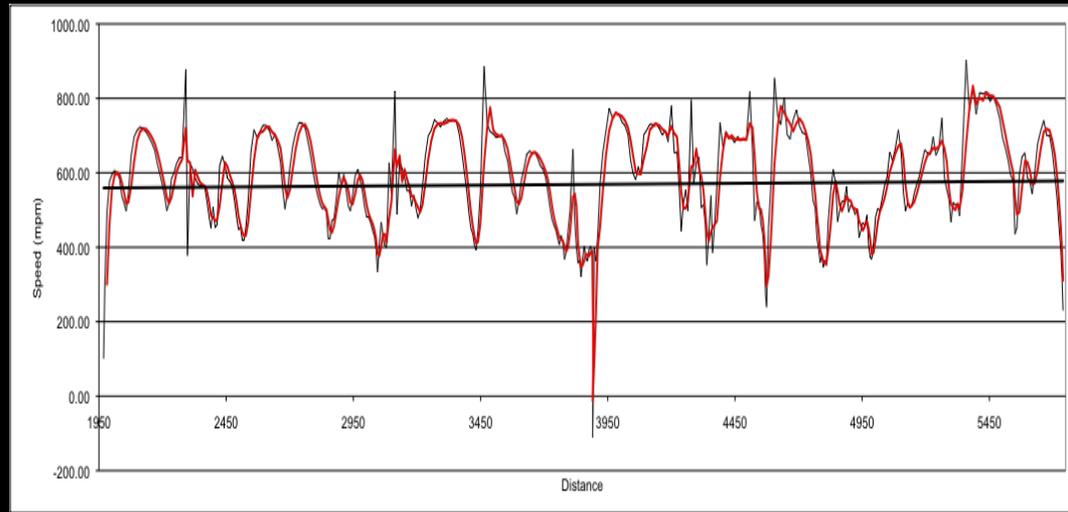
Rolex Relationship Between Speed Variation and Time Faults



N=8

Possible correlation between variation in speed on course and time faults (the greater difference in speed, slow and fast from the average speed of the ride) the more time penalties?

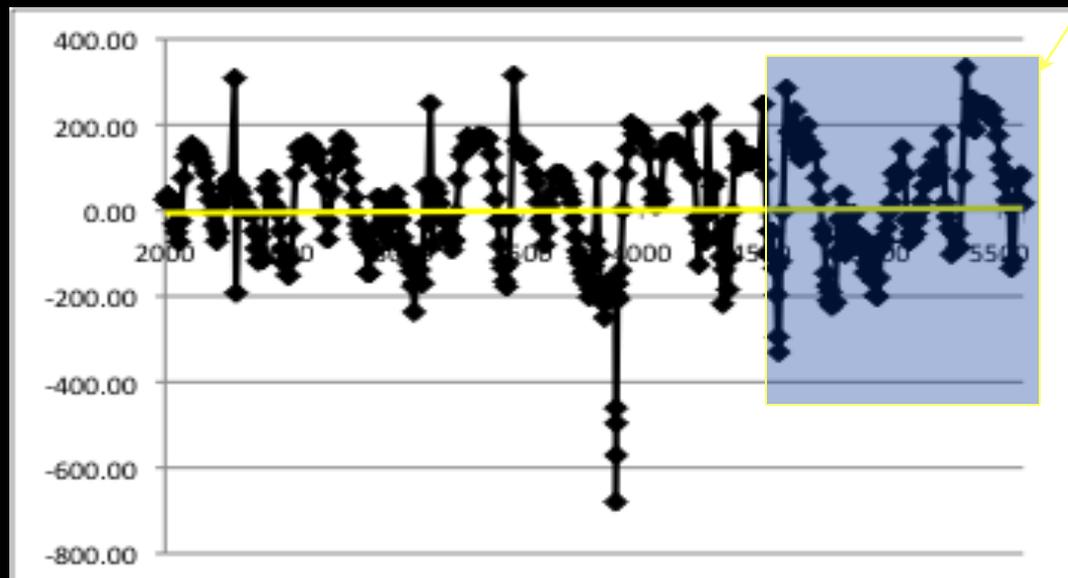
Maui Jim Incident



Average speed: 569.99 mpm

Average variation of speed: 0.0

Possible beginnings of distress



No definitive “on course” indication of horse in distress based on previous data observed in this study

Conclusions

- VARIATION in speed may be an important indicator.
- Factors to be considered
 - Weather
 - Horse/rider experience
 - Course design
 - Section of course
 - Fence Density
- Does the best ride have a high degree of consistency and low variation?
- May help in observing a horse in distress
 - Further analysis in conjunction with vets needed

Future Work

- Continue data analysis for the full 150 rides so far measured
- Need to repeat analysis, breaking up courses into 1000 meter sections to better define speed variations
- Develop intra-course comparison method for equivalent courses
- Coordinate with veterinarians to examine physiologic relationships



Thank you to all of the
riders, organizers and
volunteers who have
helped collect the data