

A Data Guy Goes Karting

with Guest Matt Romanowski



Host:
Roger Caddell
AiM Sports

Guest:
Matt Romanowski
TrailBrake.com



aimsports.com

Tuesday September 9th, 2025

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Guest:

Matt Romanowski

www.TrailBrake.com

 @TrailBrakeMatt



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- Seminars, at Track Coaching, Offsite Support, Online Sales, Pro Racing DAG
- Advanced CAN and Sensor Integrations, PDM Setup/Config, and More!
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Matt Romanowski

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The 914 System

Just a Few Devices



A Data Guy Goes Karting

The 914 System – Just a Few Devices

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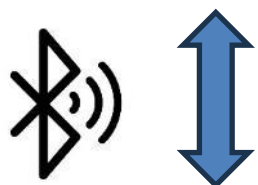


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If You Have Questions

The Kart System

Standard Issue AiM



A Data Guy Goes Karting

The Kart System – Standard Issue AiM



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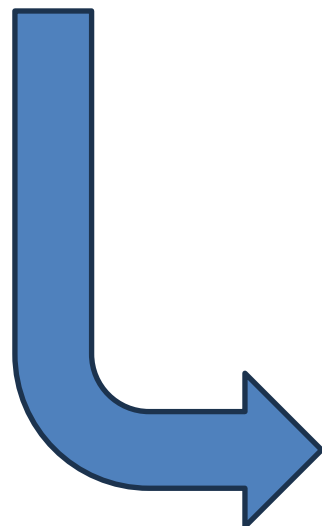
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We Have Answers!
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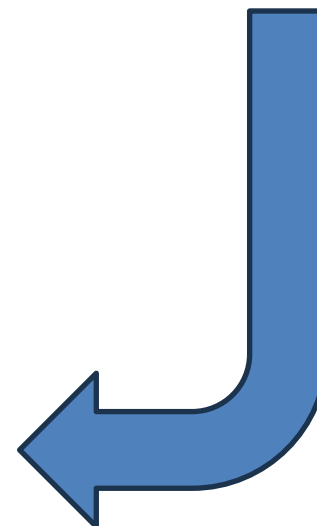
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If You Have Questions

RaceStudio 3 is the Key!

Cars or Karts, RaceStudio 3 Handles the Heavy Lifting



RS3
RACESTUDIO



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RaceStudio 3 is the Key!

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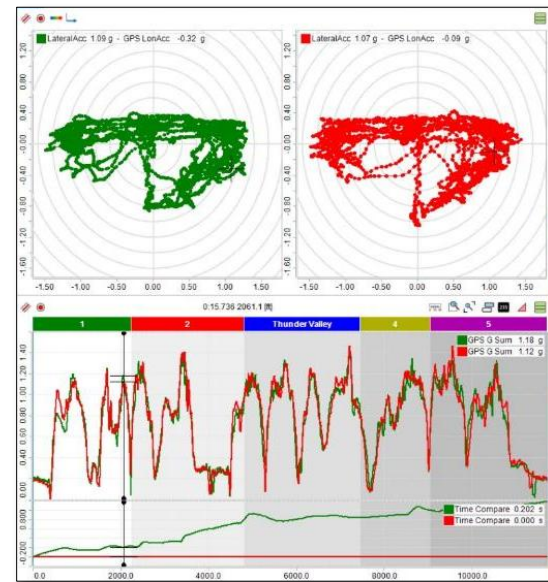
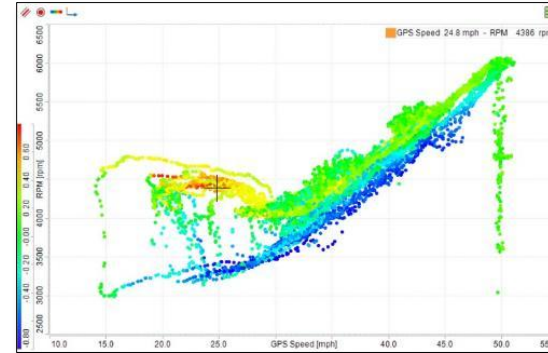
We Have Answers!
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It's the Same!

The Data Analysis Tools are the Same



- Time-Distance Graph
 - Best 3 or 5 Segment Times
- Split Report
 - Split Report Graphs
- Channel Report
 - Channel Report Graphs
 - You Can Graph the Channel Functions!
- Video from SmartyCam
 - Export Video Theoretical Best Lap
- And More
 - Histograms
 - Frequency Analysis
 - Scatter Plots



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The Data Analysis Tools are the Same!

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Same Tools, But Different!



The difference in Smarty Cam mounting location has taken some getting used to.

Smarty Cams in Cars are typically mounted in the center with Karting, they are normally on one side or the other and the driver may block some of the view.



The track length distances are also typically different – kart tracks are shorter and things happen fast!

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Same Tools, But Different!

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The 1st Step of Car Data Analysis

The Channel Report!



You Must Be Sure the Vehicle Health is Good

Channels Report																
Scatter Split Times Report Time-Distance Track Tire Temps Driver Suspension Analysis																
Lap	Time	Dist	Min [rpm]	Max [rpm]	Min [psi]	Max [psi]	Min [V]	Max [V]	Min [F]	Max [F]	Min [mph]	Max [mph]	Min [psi]	Max [psi]	CasePressure	CaseP
2025, Jul 19 10:44 AM																
out	3:55.188															
1	1:47.098	11665.3	3495	7945	63.9	81.9	13.4	13.5	130.0	144.0	42.3	117.8	-13.7			
2	1:50.175	11665.8	3342	7556	56.3	77.5	13.4	13.5	144.2	155.1	43.7	118.9	-13.6			
3	1:47.664	11655.0	3351	7633	52.8	76.0	13.4	13.5	155.2	164.2	44.6	118.2	-11.0			
4	1:47.712	11660.4	3256	7745	48.8	74.2	13.4	13.5	164.2	171.4	44.1	117.7	-12.4			
5	1:49.860	11675.7	3329	7505	50.8	73.8	13.4	13.5	171.4	177.8	44.3	118.2	-10.3			
6	1:47.197	11686.7	3412	7674	49.2	73.4	13.4	13.5	177.6	183.6	43.7	117.3	-10.6			
7	1:47.087	11709.9	3527	7828	50.2	73.1	13.4	13.5	183.2	187.9	43.5	117.7	-10.4			
8	1:52.950	11685.4	3460	7479	47.6	72.9	13.4	13.5	187.5	191.6	46.5	118.1	-9.6			
9 (best)	1:46.154	11695.6	3613	7709	51.9	73.4	13.4	13.5	189.1	193.1	43.1	114.5	-9.7			
10	2:17.756	12045.2	1605	7481	21.6	73.0	13.5	13.6	192.6	195.9	23.3	117.3	-10.2			
in	1:02.362															
average value	1:51.365	11714.5	3239	7656	49.3	74.9	13.4	13.5	169.5	176.5	41.9	117.6	-11.1			
maximum value	2:17.756	12045.2	3613	7945	63.9	81.9	13.5	13.6	192.6	195.9	46.5	118.9	-9.6			
minimum value	1:46.154	11655.0	1605	7479	21.6	72.9	13.4	13.5	130.0	144.0	23.3	114.5	-13.7			
std deviation	0:09.491	117.4	584	155	10.8	2.9	0.0	0.0	20.9	17.5	6.6	1.2	1.5			
2025, Jul 19 8:54 AM																
out	6:17.271															
1	2:44.452	11842.0	1517	6455	59.9	92.7	13.4	13.6	74.8	91.6	8.1	101.6	-7.3			
2	1:53.869	11673.3	3310	7568	62.9	85.4	13.4	13.5	91.6	107.8	39.0	111.8	-14.7			
3	1:48.571	11850.2	3447	7785	63.0	81.7	13.4	13.5	108.0	124.2	39.4	119.0	-14.6			
4	1:46.244	11675.0	3385	7745	57.4	78.0	13.3	13.4	124.4	137.0	45.1	114.6	-14.3			
5	1:46.238	11677.3	3449	7711	55.6	75.2	13.3	13.4	137.0	148.4	44.8	117.5	-12.6			
6 (best)	1:44.961	11689.0	3627	7514	55.8	75.1	13.3	13.4	148.4	157.5	47.2	118.6	-12.4			
7	2:12.034	12014.1	2184	7518	30.4	74.6	13.3	13.5	157.8	165.9	29.7	118.3	-12.5			
8	3:01.081	12128.1	1056	7580	13.9	78.9	13.3	13.6	163.7	169.0	0.0	96.3	-11.3			
in	1:41.973															
average value	2:07.181	11793.6	2744	7484	49.9	80.3	13.3	13.5	125.7	137.7	31.7	112.2	-12.5			
maximum value	3:01.081	12128.1	3627	7785	63.0	92.7	13.4	13.6	163.7	169.0	47.2	119.0	-7.3			
minimum value	1:44.961	11650.2	1056	6455	13.9	74.6	13.3	13.4	74.8	91.6	0.0	96.3	-14.7			
std deviation	0:29.790	183.8	1010	429	17.9	6.2	0.0	0.1	32.0	28.0	18.0	8.6	2.4			

A Data Guy Goes Karting

The 1st Step of Car Data Analysis

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The 2nd Step of Car Data Analysis



The Time-Distance Graph!

I Dig in with Speed, Throttle, Brake, and Steering to go faster



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The 2nd Step of Car Data Analysis

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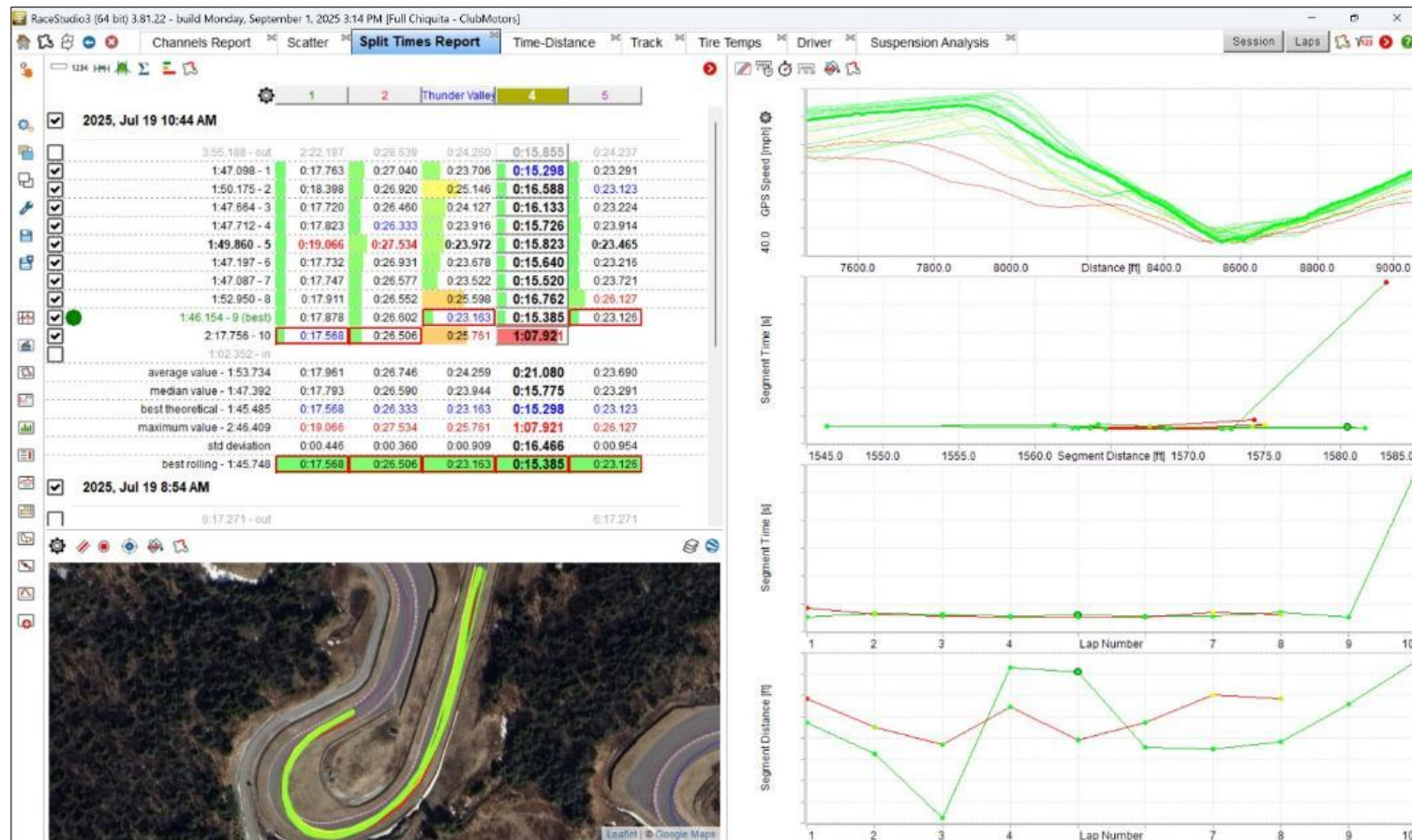
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Segments in Car Data Analysis



One of my Last Stops

Where are Opportunities to be More Consistent and go Faster!



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Segments in Car Data Analysis

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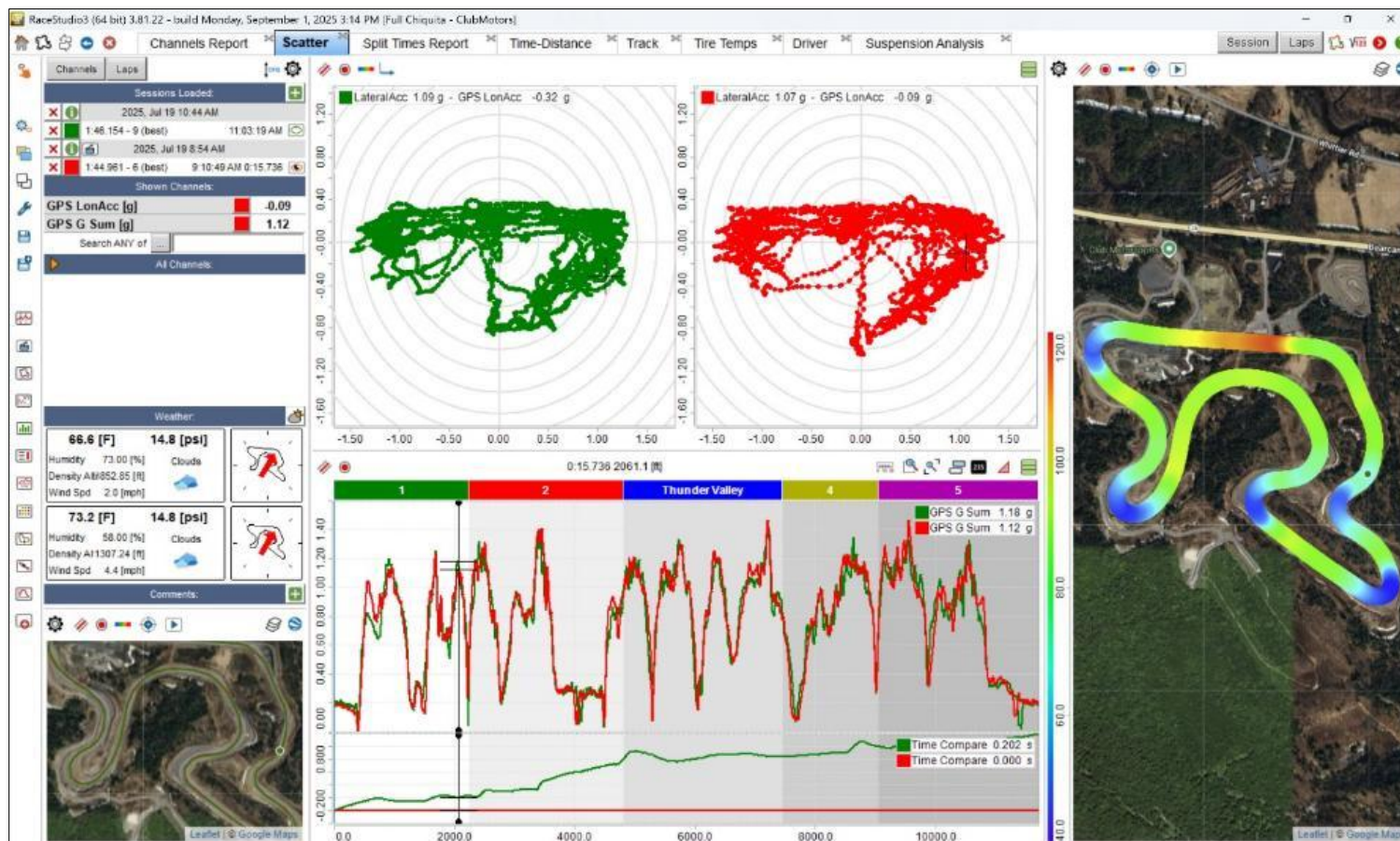


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Keep Digging In

Friction Circles, Track Maps, and More

Math Channels, Altitude, and Different Visualizations to go Faster!



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Keep Digging In

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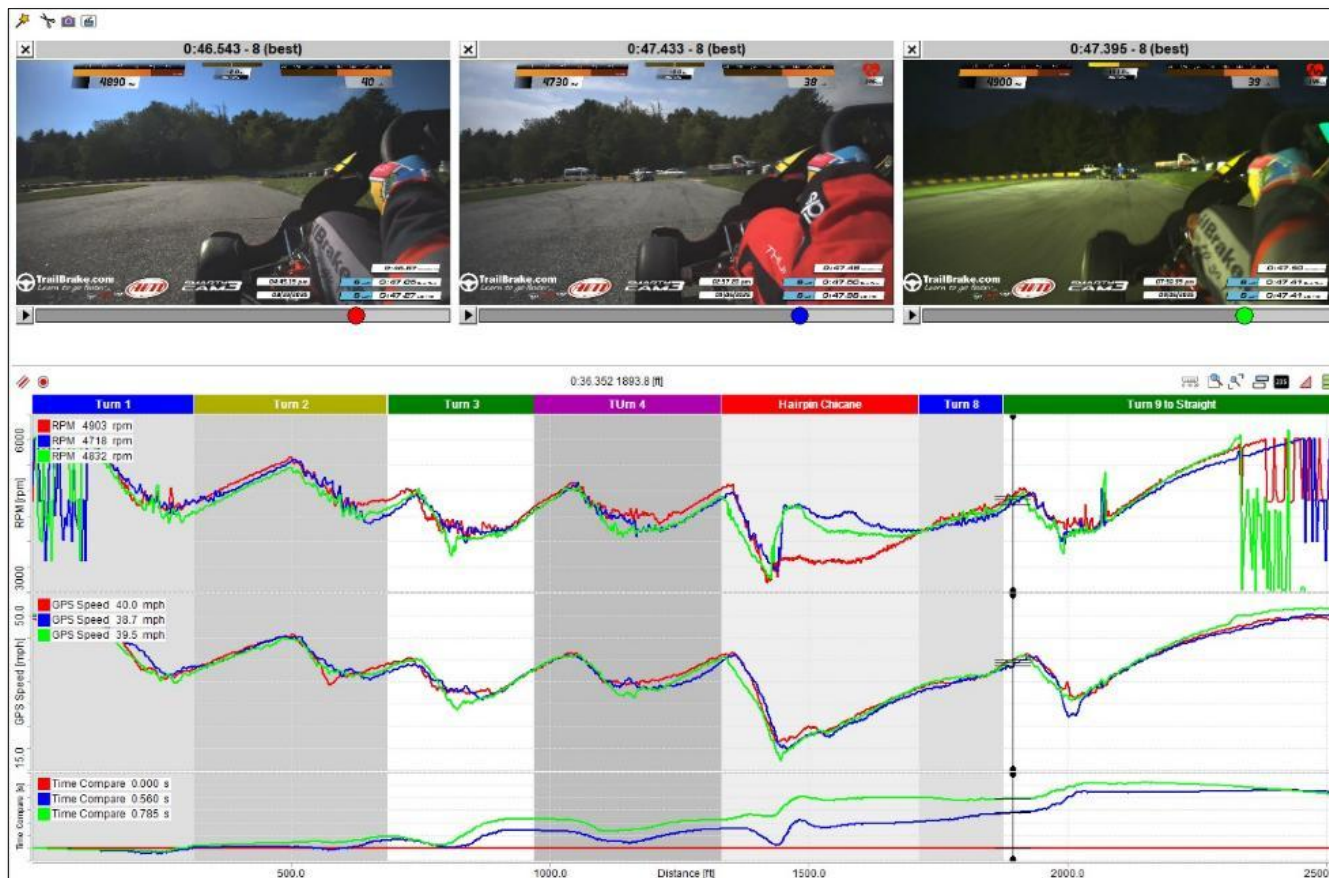
The 1st Step of Kart Data Analysis



What does the Speed and RPM look like?

I start with a Time/Distance Graph and SCHED Video.

This lets me analyze the Rev Limiter, Excess Clutch Slip, and Consistency (or not!)



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The 1st Step of Kart Data Analysis

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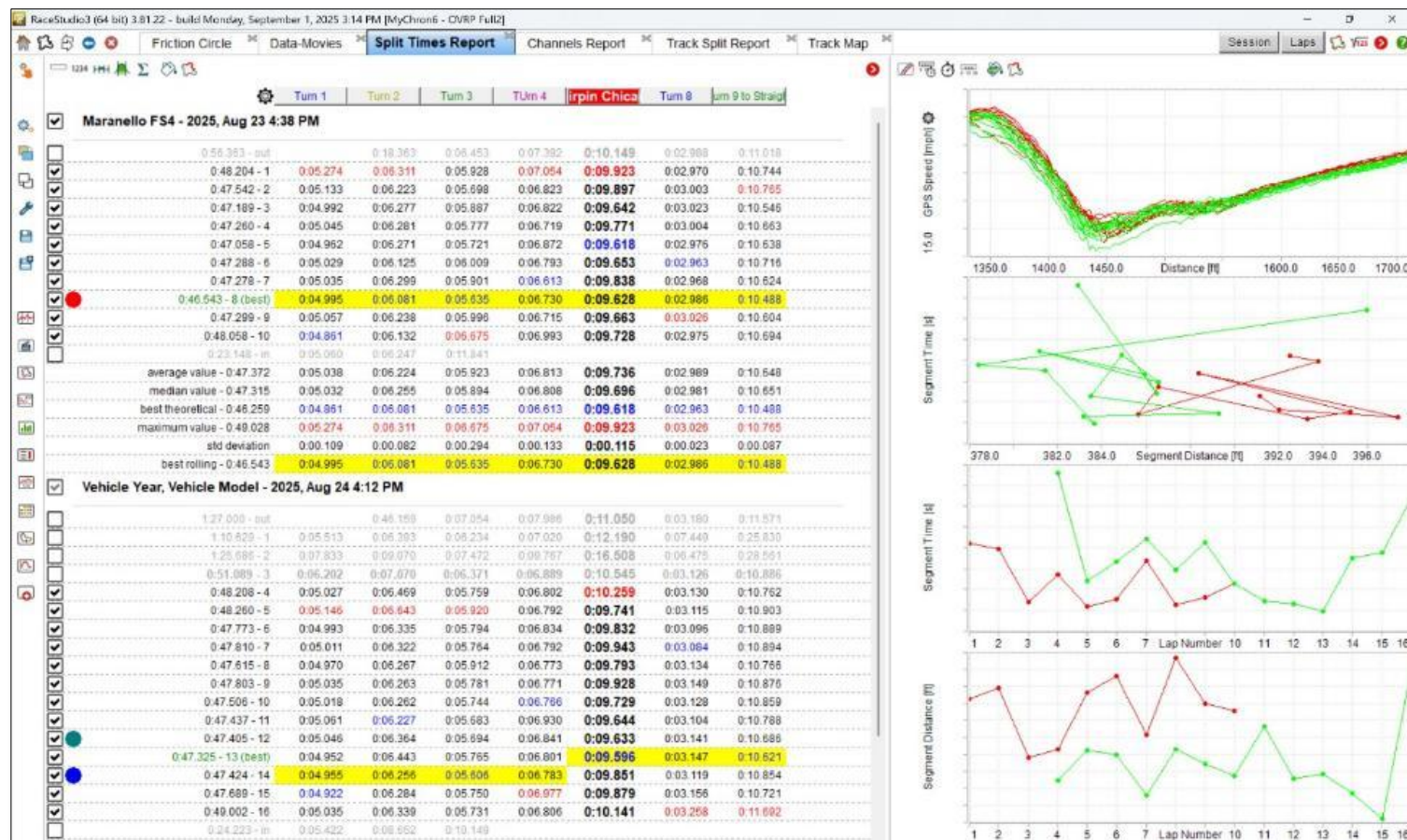
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The 2nd Step of Kart Data Analysis

Segment Analysis!



Segment Analysis displays what is fast, what matters, and where to focus



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The 2nd Step of Kart Data Analysis

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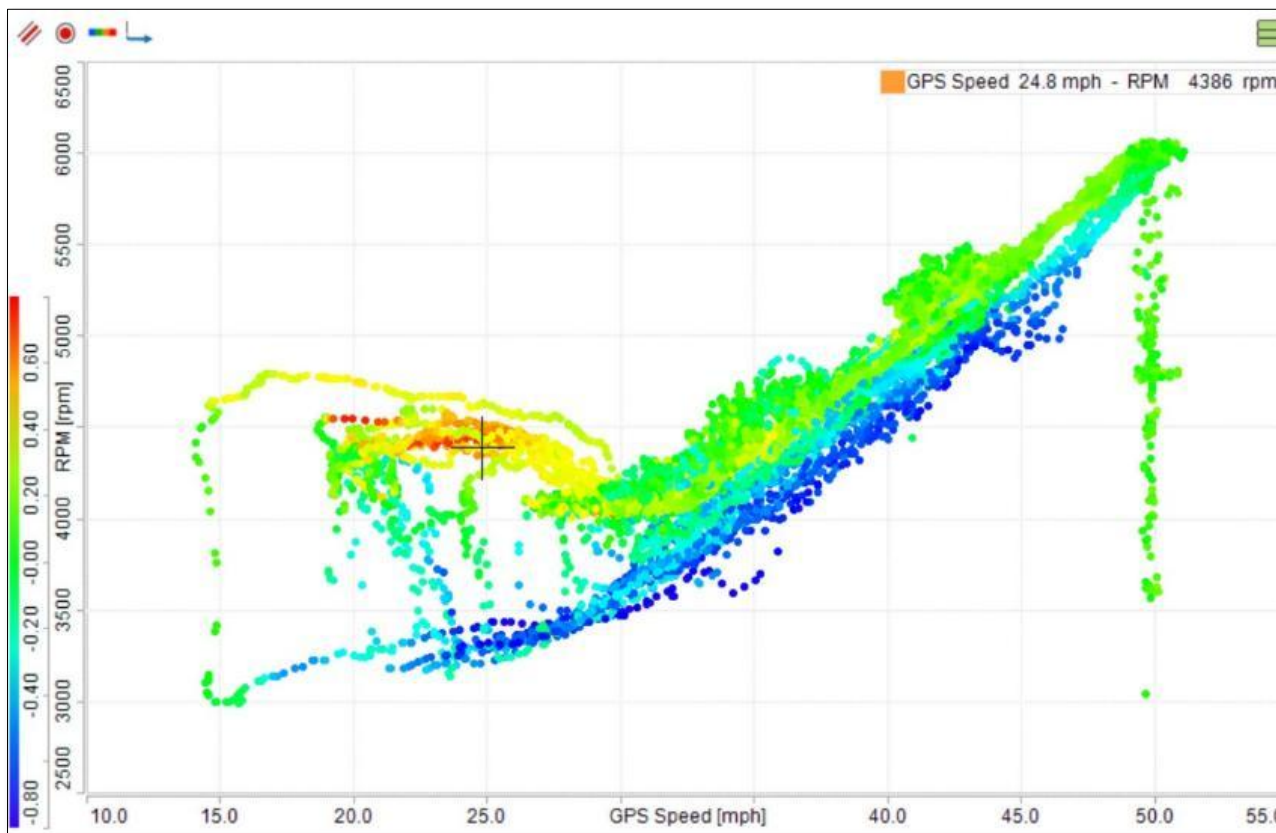
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The 3rd Step of Kart Data Analysis



Diving Deeper into Analysis

Different graphs and visualizations let me investigate into new areas and take a more involved look



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The 3rd Step of Kart Data Analysis

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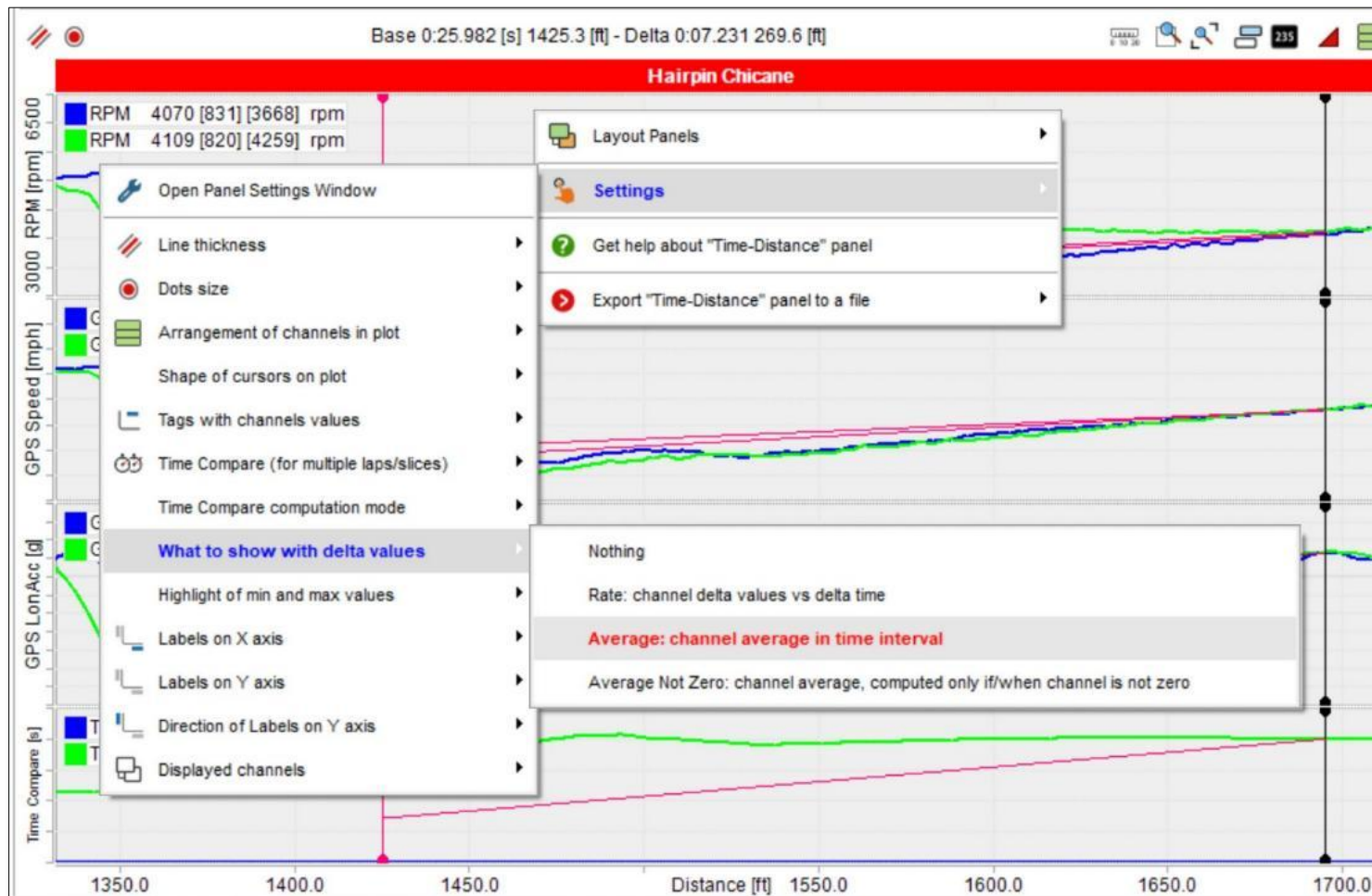


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Investigations, the Delta Function



Delta Function Extras – Rate, Average, Average Not Zero



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Investigations, the Delta Function

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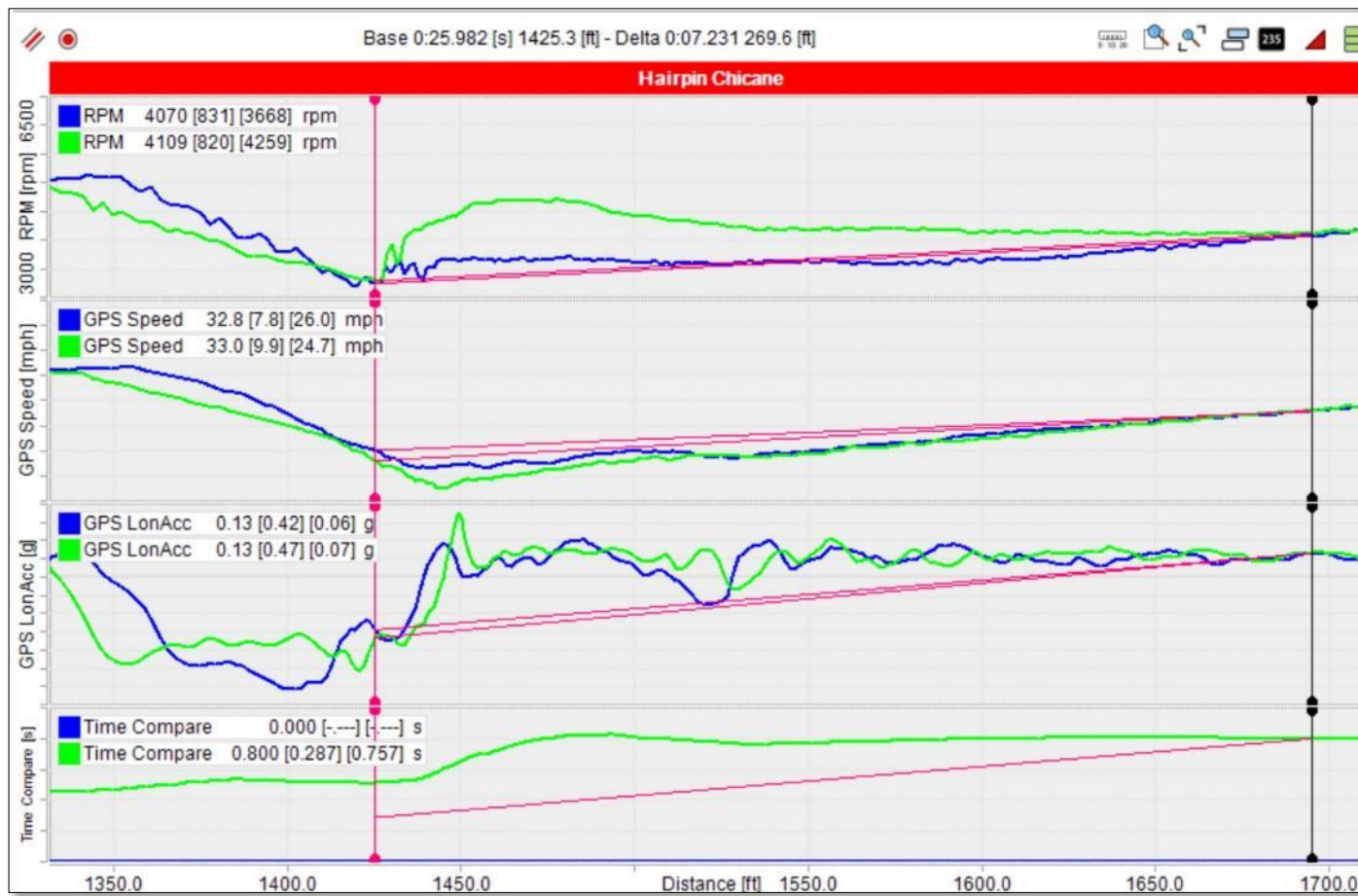


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Investigations, the Delta Function



The Delta Function provides a ton of info. Showing the average acceleration was .01 less when the clutch was slipping!



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Investigations, the Delta Function

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More Rabbit Holes...

Diving Deep

Looking at track characteristics as I learn them,
Looking at Altitude Changes, G Forces, etc.



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More Rabbitt Holes, Diving Deep

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If You Have Questions

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with Guest Matt Romanowski



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AIM Sports

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TrailBrake.com

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CJ Greaves
Legendary Off Road Racer



Host: Roger Caddell
AIM Sports

Guest: CJ Greaves
Off Road Racer

 aimsports.com Tuesday August 12th, 2025 LearnFast™



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 - RaceStudio 3 Basic Configuration - Part 2
 - **I Have Downloaded my Data, Now What - Part 1*
 - **I Have Downloaded my Data, Now What - Part 2*
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 - Selection Criteria
 - Data Views
 - Sensor Calibration
 - Measure Units
 - Conditional Alarms
 - Sort Channels
 - Gear Position
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 - Export Tests
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Additional Materials

LearnFast™ E-Training Videos

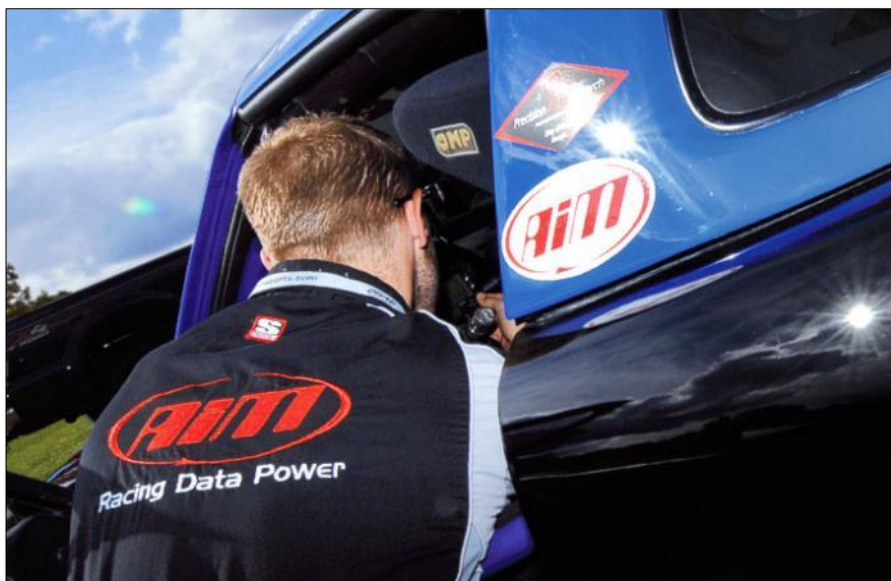
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At An Event Near You!

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Next AiM Sports Webinar

Tuesday, July 30th, 2025 – 10am Pac / 1pm East



The New EPM08/32

with Guest Robbie Yeoman



EPM08/EPM32

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