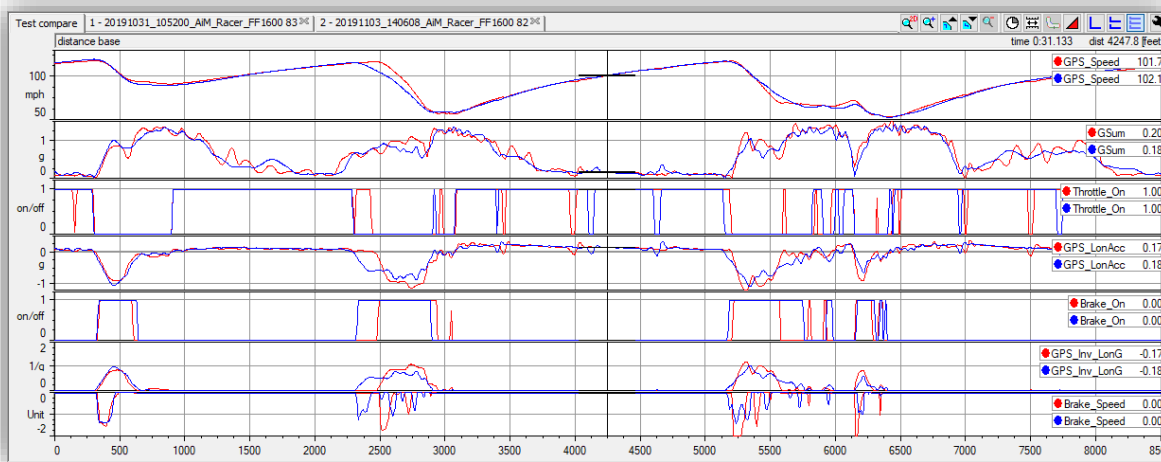




Host: Roger Caddell

Co-Host: James Colborn
www.jamescolborn.com

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May 19th, 2020

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James Colborn
colbornjames@hotmail.com

jamescolborn.com



Co-Host: James Colborn

- Avid Racer and Motorsports Enthusiast
- Producer of AiM Sports “How To” Videos on YouTube (since 2012)
- Lover of Data Analysis for Driver Development and Coaching



May 19th, 2020

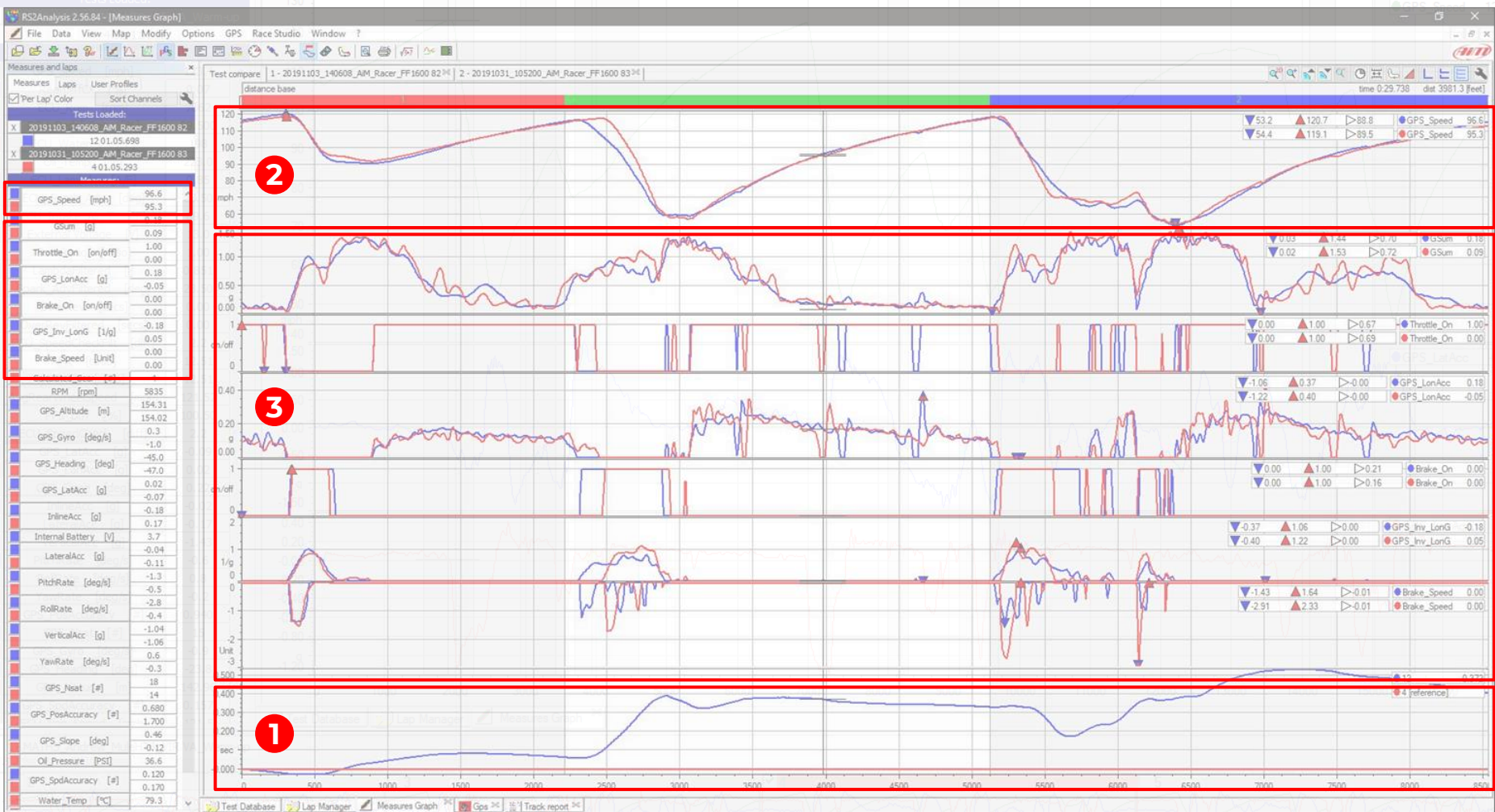
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RECAP: Reading Measures Graphs



AiM Race Studio 2 - Math Channel Examples

Here are Some "Switch" Math Channels Focused on GPS Based Data:

Brake_On:

$\text{IF}(\text{LT}(\text{GPS_LonAcc}, -0.15), 1, 0)$

A channel is created that shows a '1' when the Brakes are on, a '0' when the Brakes are off

Throttle_On:

$\text{IF}(\text{GT}(\text{GPS_LonAcc}, 0.05), 1, 0)$

A channel is created that shows a '1' when the Throttle is on, a '0' when the Throttle is off

Corner_On:

$\text{IF}(\text{GT}(\text{abs}(\text{GPS_LatAcc}), 0.25), 1, 0)$

A channel is created that shows a '1' when the vehicle is cornering, a '0' when going straight

Coast_On:

$\text{IF}(\text{GT}(\text{Brake_On}, 0.5), 0, \text{IF}(\text{GT}(\text{Corner_On}, 0.5), 0, \text{IF}(\text{GT}(\text{Throttle_On}, 0.5), 0, 1)))$

A channel shows a '1' if the driver is NOT doing any one of these: Brake_On, Throttle_On, or Corner_On ... Coasting!

Here are Some Additional Math Channels Focused on GPS Based Data:

Brake_LapT:

$\text{lap_integ}(\text{Brake_On})$ Channel showing Braking in seconds per lap

Throttle_LapT:

$\text{lap_integ}(\text{Throttle_On})$ Channel showing Acceleration in seconds per lap

Corner_LapT:

$\text{lap_integ}(\text{Corner_On})$ Channel showing Cornering in seconds per lap

Coast_LapT:

$\text{lap_integ}(\text{Coast_On})$ Channel showing Coasting in seconds per lap

Coast_LapD:

$\text{lap_integ}(\text{Coast_On} * \text{GPS_Speed} * \text{MPH2FTS}), 0$ Channel showing Coasting in feet per lap

Brake_LapD:

$\text{lap_integ}(\text{Brake_On} * \text{GPS_Speed} * \text{MPH2FTS}), 0$ Channel showing Braking in feet per lap

Brake_LapP:

$(\text{Brake_LapT} * 100) / \text{time}()$ Channel showing Braking in percentage of a lap

Creating GPS Math Channels

Math channels

General 1 - 20191103_140608_AIM_Racer_FF1600 82 2 - 20191031_105200_AIM_Racer_FF1600 83

Delete Insert

Channel parameters

Name: Throttle_On

Unit of measure: on/off

Full scale: 1.2

Zero scale: 0

Sampling rate: 10

Filter: 0

Decimal figures: 2

☐ I want to use it as a speed channel

☐ Use it as speed reference (if inserted)

☐ Automatically insert into files

☐ Overwrite channels with the same name

Add >

<<< Paste

Empty

Formula

IF(GT(GPS_LonAcc,0.05),1,0)

Test channel

Formule construction

Constants:

KM2MI
MI2KM
KM2FMS
MPH2FMS
MI2FT
FMS2MI

Name: KM2MI

Value: 0.621371

New Delete

Identifiers:

Engine
Speed1
Speed2
AccLat
AccLong
AccVert
Gyro
Chan1
Chan2
Chan3

Import set

Export set

Default AIM set

Cancel

OK

GPS_MATH_CHANNELS - Notepad

File Edit Format View Help

```
BRAKE ON
IF(LT(-0.15,GPS_LonAcc),0,1)
Unit of measure: on/off
Full scale: 1.2
Zero scale: 0

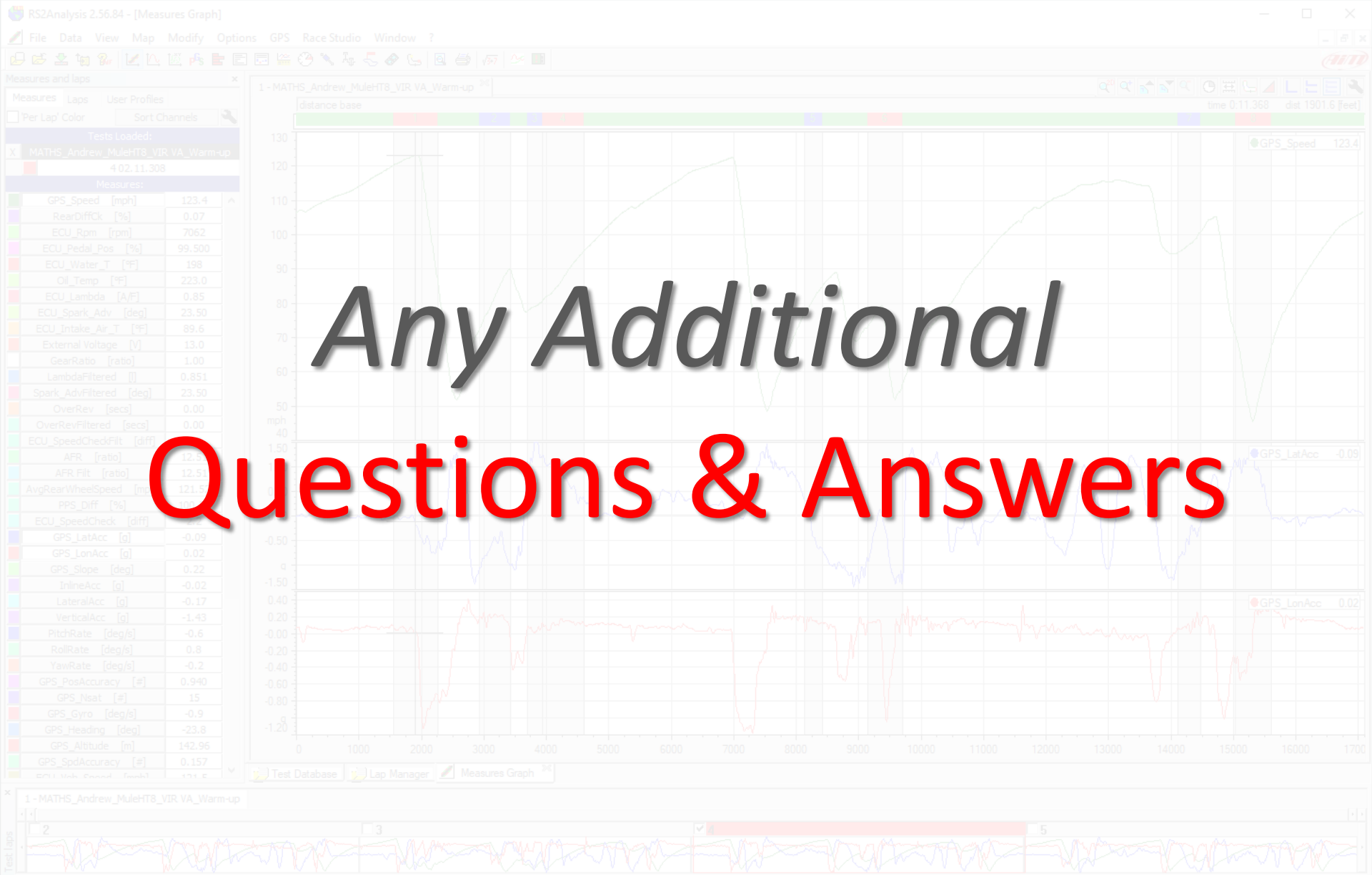
THROTTLE ON
IF(GT(GPS_LonAcc,0.05),1,0)
Unit of measure: on/off
Full scale: 1.2
Zero scale: 0

GPS BRAKE SPEED
IF(LT(GPS_LonAcc,-0.15),deriv(GPS_LonAcc),0)
Unit of measure: Unit
Full scale: 0
Zero scale: -2

INV GPS LONG
-GPS_LonAcc
Unit of measure: 1/g
Full scale: 2
Zero scale: 0

GSUM
sqrt((GPS_LatAcc^2)+(GPS_LonAcc^2))
Unit of measure: g
Full scale: 2.5
Zero scale: 0
```

Ln 1, Col 1 100% Windows (CRLF) UTF-8



Any Additional Questions & Answers



Additional AiM Sports Training and Support

LearnFast™ E-Training Video

Currently 70 Videos and Growing

 **YouTube** www.youtube.com/aimdata

- All New Bi-Weekly 2020 Webinar Videos
- Software Updates with Race Studio 3
- Pre-Calculated Gear Position Function
- Configuring WiFi Communication
- Customizing AiM Device Logos
- Race Studio 3 Basic Configuration - Part 1
- Race Studio 3 Basic Configuration - Part 2
- **I Have Downloaded my Data, Now What - Part 1*
- **I Have Downloaded my Data, Now What - Part 2*
- GPS Lap Insert
- Data Views
- Measure Units
- Sort Channels
- Test Properties
- Per Lap Color
- Export Tests
- Channel Reports
- Setting Time
- Track Mapping
- Selection Criteria
- Sensor Calibration
- Conditional Alarms
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Additional Materials

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At an Event Near You!



Next Webinar

Thursday May 21st, 2020

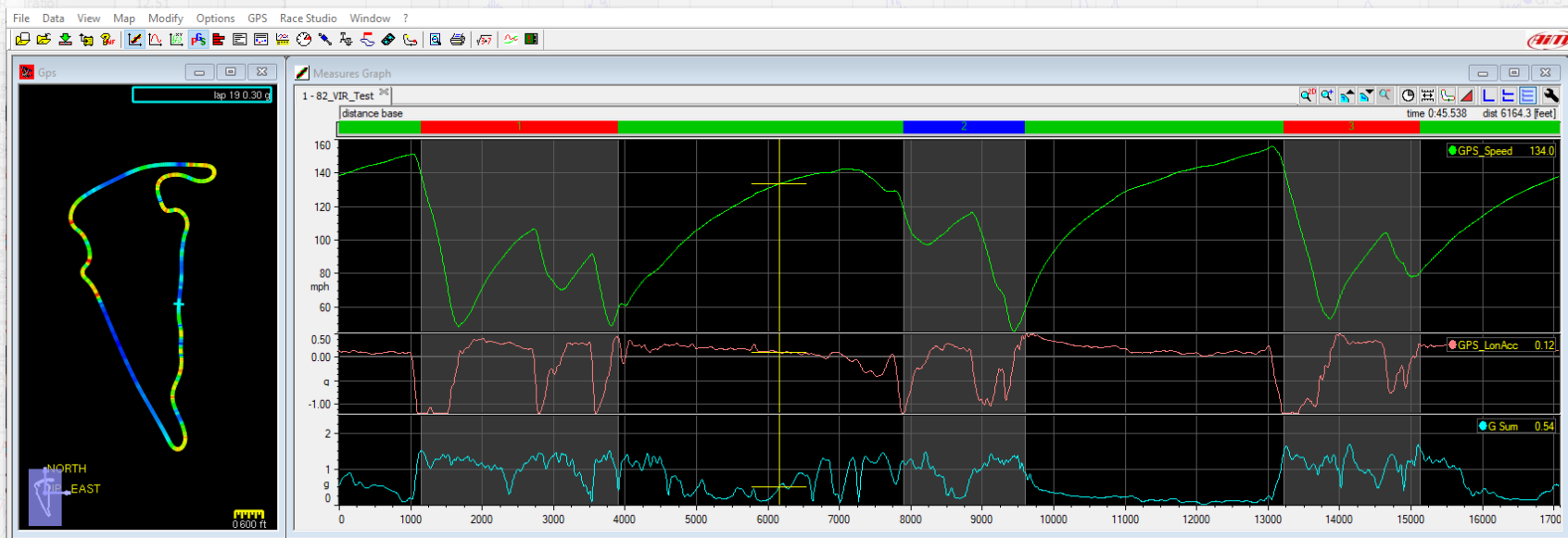
10:00am Pac / 1:00pm East



Co-hosted by: Peter Krause

www.gofasternow.com

Self Coaching/Instructing With AiM Sports Data



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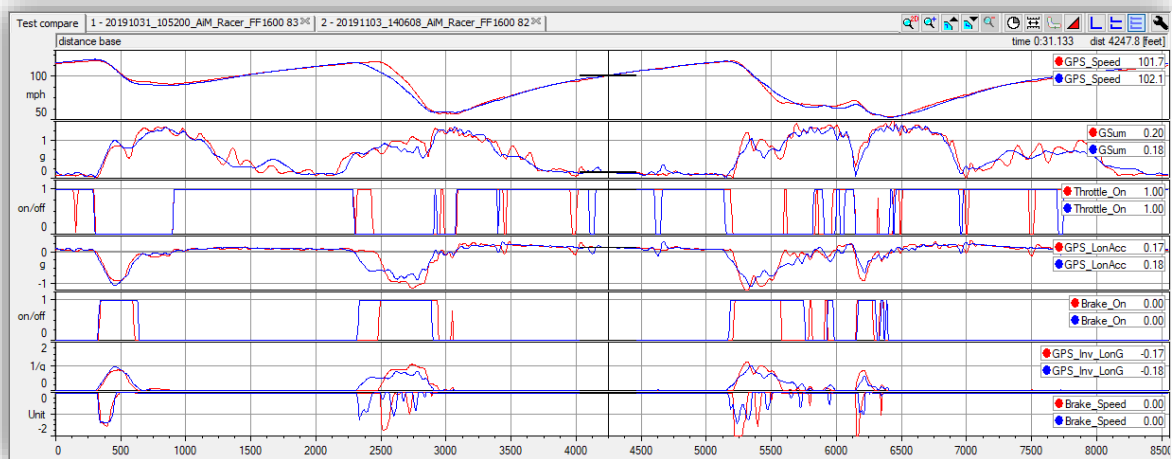


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Next Webinar Topic

Self Coaching/Instructing with AiM Data





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