Motec Beginners Guide Part I
By WR304

Many thanks to **Sean_S37** for converting it to PDF. To **Eden7c** for hosting this free download and everyone on the www.GTR-Game.com and www.Racesimcentral.com forums for their input which is much appreciated. 😊

Important Note: This guide relies heavily upon Motec. Make sure your Ingame Motec sample rate is set to 10 instead of 100 for it to work correctly. (See Appendix 2 at the bottom of this guide for details.)

It assumes that you're using my updated Motec configuration file GTR Analysis190605.icf plus **MMos**'s Mathematics Templates. (Included in PDF version Zip File).

Download here: **Motec_Interpreter_Configuration190605.zip**

Unzip both files to c:\GTR\Motec\Interpreter\Configurations

Load the Graphical Analysis Configuration by opening Motec select File- Interpreter Configuration- Load- Templates GTR Analysis190605.icf

Load **MMos**'s Mathematics Template by opening Motec select File- Interpreter Configuration- Load- Mathematics-MosMath0.1.imc

You then have to go to View- Maths- User Constants- and change Con07 so that it reads Steering Lock and enter the value you use as steering lock in the GTR garage (eg: 13.5 where your steering lock is 13.5 degrees in GTR.) You need to remember to change this to match whichever setup you're analysing.

You can check this by clicking the File Details button within Motec going to Vehicle and the steering lock value used will be displayed there.

My Quick Guide to Using Motec with GTR to Improve Your Laptimes

This is basically a repost of my RSC Motec guide but with some new pictures and an expanded section about suspension histograms.

Motec Language (Not required for International Version of GTR).

Here's how you change the GTR Motec Interpreter from German to English.
1. Download the English version from http://software.Motec.com.au/release/
2. Install it to c:\program files\Motec
3. Open this folder and then copy the Interpreter folder to C:\GTR\Motec which will overwrite the German version
4. Run c:\GTR\Motec\Interpreter\Mintwin.exe which will open the Motec Interpreter.
5. Select File-Open-Directory within Motec and browse to C:\GTR\Motec\Logged Data and click ok
6. Open the Virtual Dashboard within Motec and select View-Open. From the list load the GTR.tvw file
7. Close Motec Interpreter selecting YES to save the configuration
8. (optional) Click on the Windows Start Bar- Programs- Motec- Motec Interpreter and then right the icon and select properties. Change the target to "C:\GTR\Motec\Interpreter\Mintwin.exe" You will now be able to use the same version whether running Motec from within GTR or by itself.

Map Pack (Included in PDF version Zip File).
Once you've done that you need to install **Pieters** excellent map pack (attached below) to make sure that the reference track maps are drawn correctly. It also adds the track corner names to the Motec maps for you. This needs doing on both the German and International versions of GTR.

Networking Motec

If you want to have Motec open on a seperate networked PC follow these guidelines:

1. First of all you've got to map the Network Drive: For Windows XP go to My Network Places- View Workgroup computers- select the PC and drive you want and then right click to select map network drive. Remember to select reconnect at logon if you're going to use it a lot.
2. When you open Motec on the other PC go to File- Open and click on the directory tab. You should now be able to browse to the logged data file on the other PC. by default it'll be (Network Drive letter):\GTR\Motec\Logged Data
3. If you've installed a seperate Motec interpreter copy the GTR templates and any custom ones you've made across into it.

It's not possible to have live telemetry with GTR however. The Motec file isn't saved until you finish the session by returning to the garage or quitting the race. There is a separate real time Motec Telemetry module but it won't work with GTR.

Once you've got a working lap file there are only really four parts of Motec I use to improve setups: Graphical analysis, Histogram, Track map and virtual dash. Suspension damper analysis doesn't work with GTR because the sampling rate ingame is too low. My work around is to use a combination of the other parts (see below).

The Motec Interpreter Manual and help files are very useful and go into more detail than I am here.

Motec Organizer by 2Fast4U (Included in PDF version Zip File).
Ver 0.2.5 Beta

This program enables you to keep track of the files in your Motec Logged Data Folder plus it lets you check and remove unwanted old data files contents quickly and easily. Each time you start a driving session in GTR a new file will be created and stored. This folder can easily reach 300mb in size and contain 1000 files plus after only a month. It will slow down Motec as it has to sort through all the old files each time each time you run it.

The first thing is to click "Settings" on the top bar and enter the file paths to your Logged data folder and Motec Interpreter. By default they will be:

C:\GTR\Motec\Logged Data\
C:\GTR\Motec\Interpreter\Mintwin.exe

From the drop-downs select the required options. For testing these will normally just be:

Name: Driver name
Venue: Circuit
Car: One being used

The other options enable you to sort files by setup, round, weather etc.

Press "Load/Refresh" to display all the required files. Press it again to clear the data and start a new session

Press "Sort by lap time" button. This sorts all the laps you've done by fastest lap time. Scroll across to the far right of the main box to find the list of lap times. Left Clicking once on a lap brings up the details in the boxes on the right. This provides you with an "at a glance" idea of what your quickest setup was.

You need to move your mouse cursor over the central dividing bar, wait till it turns to a
before holding down the left mouse button and dragging the bar to the left making all the setup details readable. Gear ratios aren't displayed unfortunately.

This program also provides an ideal way to tidy your Motec file folder. Click "Select Empty Log" and then "Delete Sel Lap". This will delete all selected files with no valid lap time within them saving you space on the hard drive and making Motec load faster.

It's possible to rename any Motec files you want to keep by left clicking once on the file name, waiting for a second and then left clicking again. If you double left click normally the file will be opened in Motec.

Graphical Analysis

Controls

Graphical analysis is the main part of Motec. You can have up to 6 graphs per template. Scroll between templates using the F11 and F12 keys.

To add a trace right click on the parameter on the right hand side and select add trace- add to graph#. It's best to have seperate graphs rather than trying to merge everything into one.

Once you've added a trace you change the relative size of the graph by right clicking on the parameter again and changing graph size to what is needed. To zoom in on a section of graph double left click and drag the mouse to highlight an area. You zoom out again by pressing W.

The main aim of Motec is to compare sessions and setups to see what differences there are. Show or hide an overlay by pressing F4.

To add an overlay. Right click on a graph and select overlay- select compare file/lap. Select the file and lap you want to use by clicking on the file button and selecting a lap.
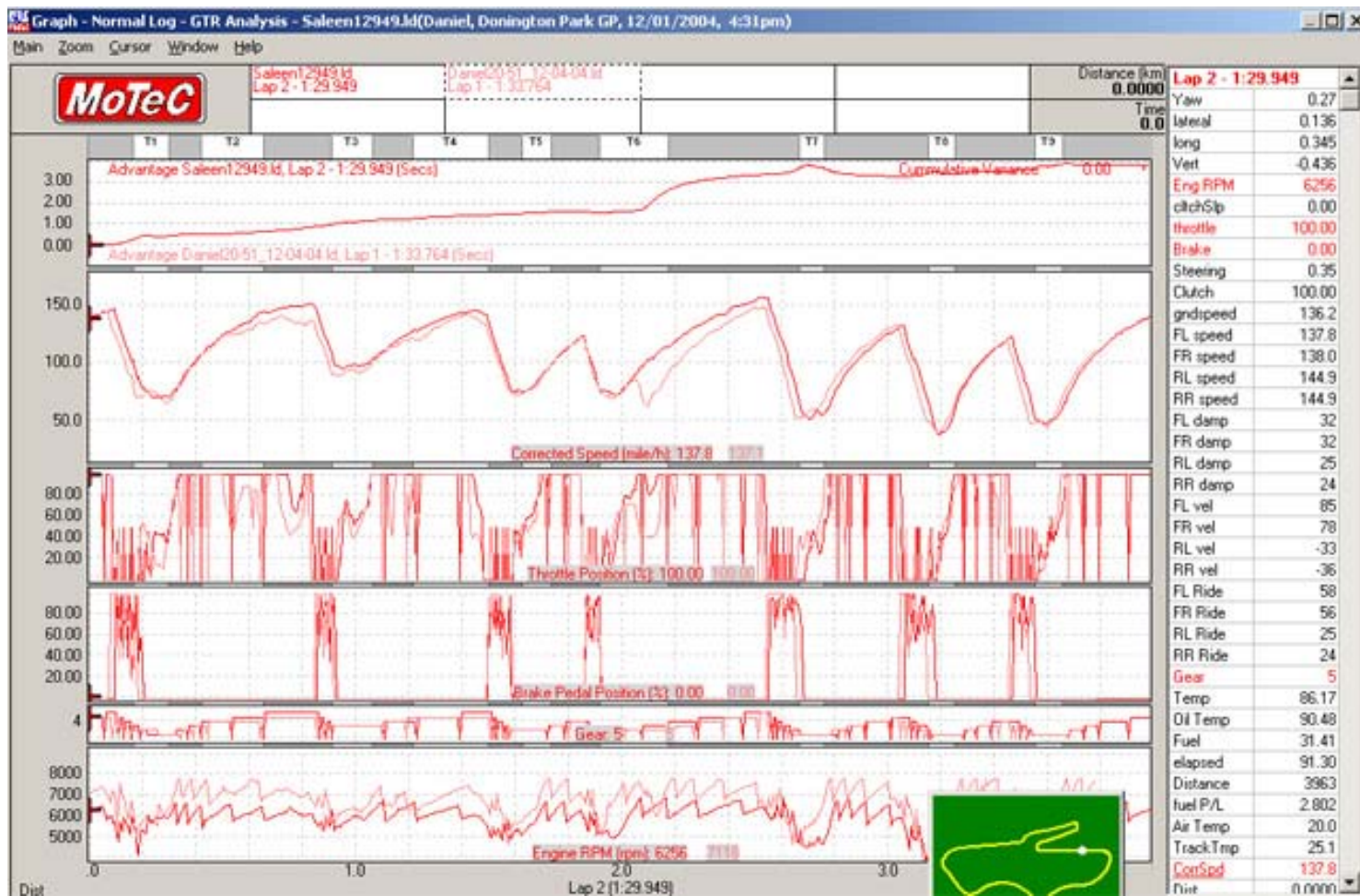
A full list of key commands is at the end of this guide.

Templates

I currently have four main templates for trying to setup the car:
- **GTR Analysis** (For analysing how I'm driving)
- **Front and Rear Suspension Overview Templates** (plus individual wheel templates for fine tuning the suspension)
- **An Oversteer template** (for checking how the car is handling through corners)
- **A Weight Transfer template** (for checking how the car deals with braking)

GTR Analysis
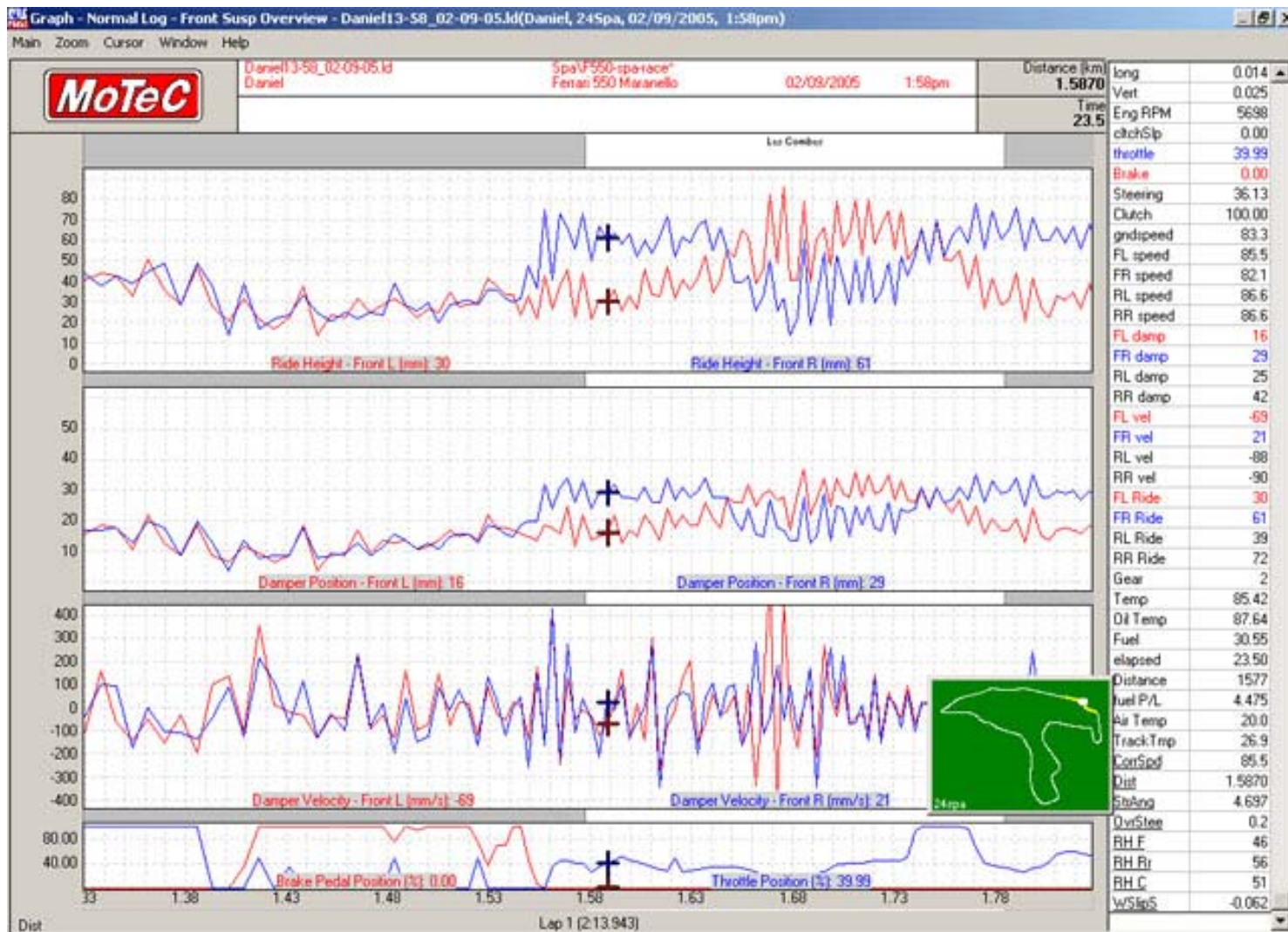
Picture 1: The GTR Analysis Graphical Template

This is my template for looking at how I'm driving. Improvements from better driving and improved setups should show up clearly here. This is the template I use the most to provide an overview of a lap.

The basic thing you compare is the corrected speed trace. A peak is the highest speed you reach whilst the troughs are your corner speed. The aim is to be faster at all times than the previous laps. It's very useful to have a cumulative variance showing also (Right click- overlay- show variance- cumulative. It only shows when an overlay is selected).

Brake and throttle show what your feet are doing on the pedals. Different people have different techniques which shows up very clearly from these traces. GTR is slightly misleading because the auto clutch blips the throttle on downshifts and kills the revs on upshifts. Basically the aim is to brake as late and as efficiently as possible and to always be either accelerating or braking. The normal technique for the GT cars from high speeds is to brake at 100% and then gradually ease the brake off as downforce decreases. The NGT cars have less downforce so I tend to modulate the brake on and off to try and stop the wheels locking. (Tip: put brake force to 90% and reduce brake sensitivity in the controller settings screen).

The gear and Engine RPM traces are normally viewed together. Set the 6th gear ratio so it reaches peak RPM at the fastest point of the circuit. Set the 1st gear so it drives well out of the slowest corner of the circuit and then arrange the other gears so the revs stay as close to the peak power output as possible.

Front and Rear Suspension Overview Templates

Picture 2: Front Suspension Overview Graphical Template

GTR shows the suspension travel as FL Damp, FR Damp etc. I have the front and rear dampers on seperate templates because otherwise the traces get a bit crowded. The aim is to keep suspension travel fairly balanced between left and right sides of the car so it isn't over compressed or extended. A big difference between the left and right dampers shows where your car is going round a bend. For a right hand bend the left side dampers will be more compressed than the right side dampers and vice versa. I've put the brake and throttle traces on all my suspension templates because I feel it helps me work out where exactly I am on the track at a particular time.

The example picture shows a Ferrari 550 Maranello approaching the Les Combes corner at Spa down the long straight, braking heavily (Note the big spike in damper velocity, plus the ride height and dampers diving as I hit the brakes and then gradually rising again as the car slows and downforce decreases) and then turning right into the start of the bend (where the two traces start moving separately). As I change direction the weight transfers from one side of the car across to the other side and then back again.

Damper velocity shows how fast the damper is moving. If it's too fast the wheel won't hold the road and you'll end up bouncing up and down making the car hard to control. If it's too slow the wheel won't absorb the bumps properly losing traction. A big spike in damper velocity is usually where you're riding a kerb. I try and keep it between +200mm/s and -200mm/s. You have to accept that some big impacts will make the suspension move faster than that however.

Ride height shows how close the bottom of the car is to the ground. You want it as low as possible without actually grounding. " I usually take the lowest ride height data from the fastest straight, so at the end of the s/f straight at Barcelona for instance.

"I would typically look at damper travel first and work out how many packers I need to put in, basically so that it is running on the packers on said s/f straight.
Then, after I have put the packers in and done a run take the telemetry for ride height front and rear and adjust to make it as low as possible at this point, if it is running on the packers they won't let it get any lower so you can get it pretty low.

When it is receiving maximum downforce is at the highest speed, so on the straight, therefore kerbs aside the lowest ride height you are likely to see is when you are running at max speed.

What I have found at Barcelona with the Saleen is to run 5cm front and 7cm rear (minimum) with 9mm front and 12mm rear for the packers."

Thanks to **Shrapnel**

For the NGT cars you only need packers at Spa because of Eau Rouge. For the other tracks just put ride height as low as possible. If you're doing long races set the rear ride height using the maximum fuel load you'll be using. As the fuel burns off the rear ride height will increase.

Oversteer Template

There are some important things to remember with this template. You need to have **MMOS**'s mathematics installed correctly for this template to work. Also the steering lock in your GTR car setup MUST be the same as the steering lock value you enter into Motec. Whenever you change the value in GTR it needs to be changed in Motec too.

Picture 3: The Oversteer Graphical Analysis Template

This template shows how your car setup handles corners.

The steered angle trace shows how far you are turning the wheel. A positive value is turning right and a negative value is turning left. This is a low value because it only goes up to the maximum steering lock of your GTR setup (eg: 13.5degrees). I use this one because you can overlay it on the vehicle oversteer trace and see them at the same scale. If you were to use the normal steering trace the oversteer trace is virtually invisible.

The oversteer trace is an attempt to predict whether your car is understeering or oversteering by comparing the amount of steering lock applied to the amount of steering lock that is expected for a particular bend's sharpness and the speed you're travelling at.

"Oversteer is displayed as a positive value,

 Understeer is displayed as a negative value.

Oversteer: A new data channel is created with the information displayed as degrees of steering angle more or less than neutral steer. Oversteer is displayed as a positive value, understeer as a negative value" Motec Help (Maths Function Details)

I think that describing it as "oversteer" where you think of huge slides is maybe the wrong word for this trace as it only seems to show the difference between how much steering lock you apply and how much steering lock you would expect to apply for the same corner. The formula doesn't take any slide factors into account.

[b]"Oversteer or Oversteer Indicator Formula[/b]

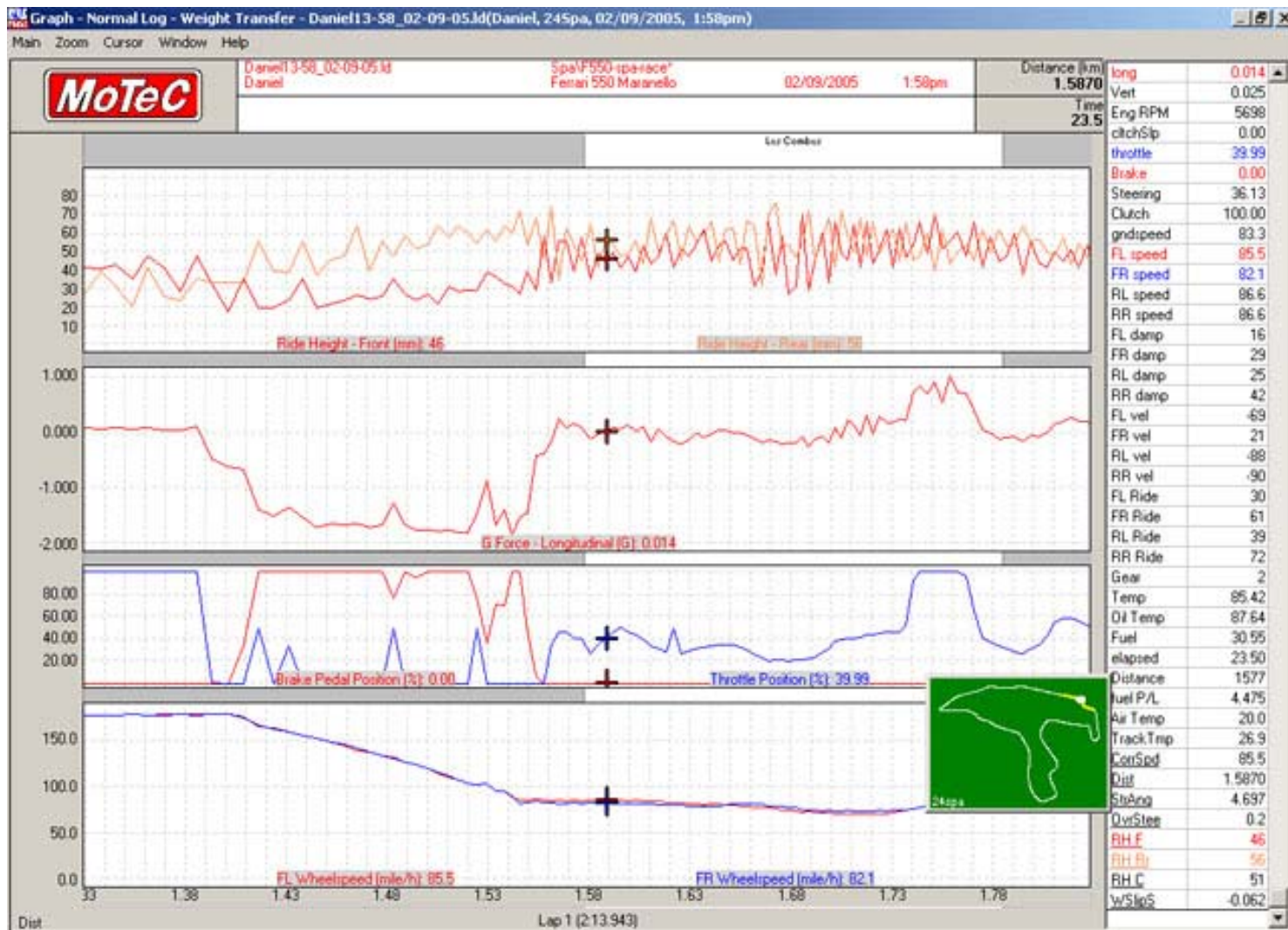OSUS=[steering angle-(wheelbase x lateral G x constant)]/speed² "

Ideally the line would stay close to 0 at all times.

Lateral G Force shows how much cornering force your car setup produces. A higher value mid turn means that your car setup has more grip than one that produces a lower figure at the same point. A GT car should be able to manage 2G plus of cornering force.

Wheel slip difference shows the speed difference between your rear wheels at a particular point on the circuit. A negative value means that the left hand wheel is rotating slower than the right hand wheel whilst a positive value means that the right hand wheel is rotating slower than the left hand wheel. This is useful for deciding your differential settings. A large amount of wheel slip under acceleration means the power side diff is too low as the wheels aren't locked together tightly enough whilst a large amount of wheel slip under brakes or off the throttle means the coast side diff is too low.

The brake and throttle traces are there for reference so you can see what driver inputs were made to cause the changes in the other traces.

Weight Transfer

Picture 4: The Weight Transfer Graphical Analysis Template

The weight transfer template is largely concerned with your cars performance under braking and acceleration. The ride height traces shown on this template are different to the others because they are the ride height of the front and rear of the car rather than for an individual wheel. This shows how the car appears during normal driving. The ride heights set in the garage are only the static ride heights which won't be the same thing as when the car is full of fuel and being affected by downforce pushing it down onto the ground.

The main use for these traces is to see how the car responds under brakes. As I brake for Les Combes the front of the car dives down and the rear rises up in the air. This is controlled by your front slow bump settings and rear slow rebound settings. The aim is to stop this happening too violently. As I lift off the brakes the front and rear ride heights come together again. This is controlled by your front slow rebound and rear slow bump settings. If this happens too fast you may find it difficult to control the car.

The Longitudinal G Force trace shows how much force your car produces under brakes. A negative value shows braking and a positive number shows acceleration. The higher this value is (negative value for braking) the better your car is working. Results from experimenting with brake bias and brake force changes will be shown by this trace.

Brake and throttle traces are included for reference whilst the two front wheel speed traces also help to show you whether you're locking up wheels under braking.

You can download my Graphical Analysis templates and MMOS's mathematics as part of the Motec Interpreter Configuration at the bottom of the guide.

Histogram

I've been using histograms as one of the main tools for trying to analyse suspension settings. To view a histogram click on the histogram tab on the top tool bar and use F11 and F12 to scroll between them. You can overlay a lap by pressing F4 just like in Graphical analysis.

I've been using them to look at two things:
- Suspension
- Engine

Suspension Histograms

This provides an overview of how the suspension is working over an entire lap. For fine tuning I use the graphical analysis suspension templates and the Virtual Dash. The histograms have the advantage that they can give you a reasonably representative comparison of front and rear suspension characteristics without having to go through an entire graph section by section.

There are a few problems with these histograms that you need to bear in mind. The data would normally be filtered to create a smooth curve. You'll sometimes end up with odd spikes in the histogram which won't appear every time. There's also no distinction between parts of the lap so you're unable to exclude data from straights or low speeds for a more in depth analysis of your suspension settings.
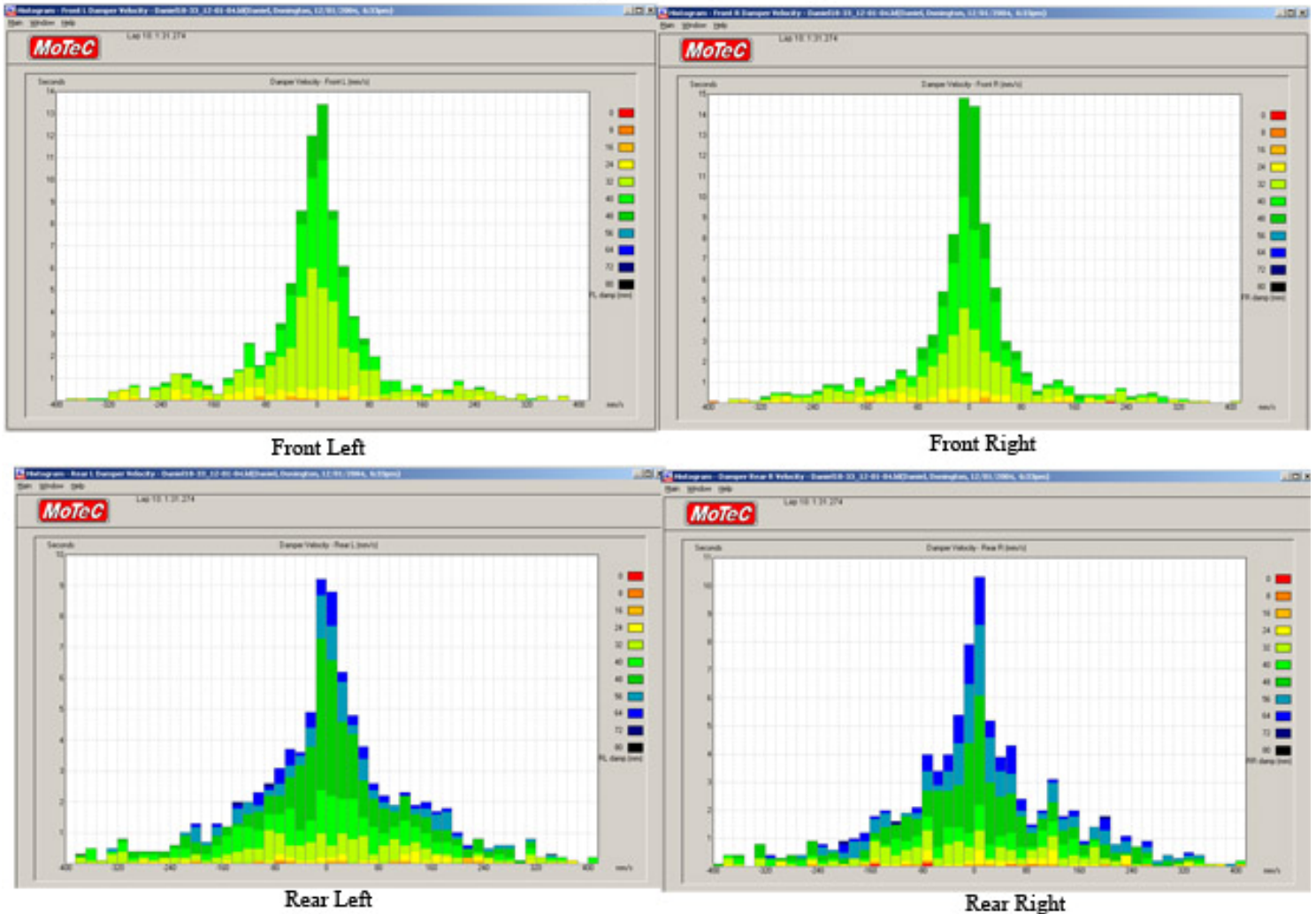
For the suspension I've mapped damper velocity against damper travel. The bottom X axis shows how fast the suspension is moving. A negative value is the damper rebounding whilst a positive value is the damper compressing. The Y axis shows how long was spent at each speed per lap (Be careful as the Y axis will auto adjust itself so you have to look carefully at the time for each graph). This is the same as the damper velocity trace in the graphical analysis templates but with the different damper speeds divided up by time to create the curve you see in the histogram.

The curve of the graph also gives you an idea of what frequency your suspension has. If the curves are very different between front and rear you'll end up with a car that has a front end and rear end that want to do different things. If you feel the car is bouncing a lot it could be down to this. Having spring strengths and damper settings that are fairly similar for both the front and rear will often give a better handling car.

The coloured bars show how far into the travel the suspension is sitting during the lap. Red is fully compressed and black is fully extended (packers and ride height settings will affect this so check the ride height graphs at the same time if you think there's a problem). The aim is to have the travel fairly balanced between each wheel. You won't be able to get these exactly the same for each wheel however. The sample pics show two laps of Donington in a Saleen. Because most of the high speed bends are right turns the left hand side of the car is more stressed and is more compressed as a result. If there is a lot of red this means that the damper travel trace is reaching zero several times during the lap. This will cause handling problems and should be avoided if possible. Stiffer fast bump settings, springs or increased ride height will reduce the amount of red in the graph.

The histograms are also very useful for setting the fast and slow bump damper settings. The ideal will vary from car to car and track to track. As an example here are two sets of histograms from Donington. The fast bump and rebound settings affect the edges of the graph: The lower the fast bump/rebound values the more time will be spent at high damper speeds. Ideally the graph should be fairly symmetrical. If the suspension is too stiff (Picture 5) you will see a very narrow graph with little spread from the centre. Softer fast bump/rebound values will result in a wider graph as can be seen on the rear suspension in Picture 6.
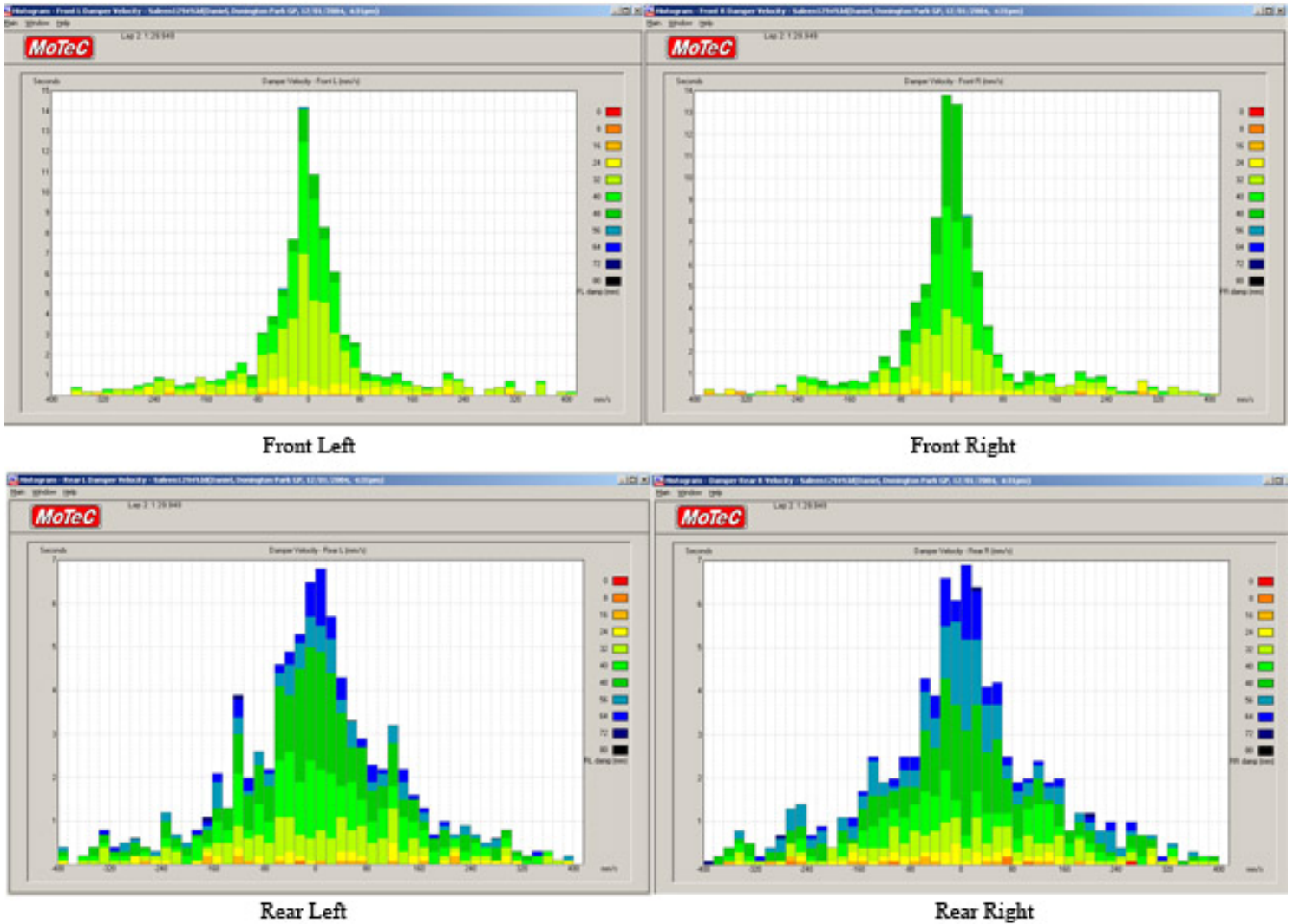
Saleen Donington Damper Analysis

Picture 5: Overstiff Saleen Suspension Histogram Example

The centre of the histogram shows what your slow bump settings are like. If the suspension is too stiff (Picture 5) the suspension will spend too much time stationary. This is shown clearly on the rear suspension where Picture 5 has a sharp point whilst Picture 6 has a flatter profile in the centre of the graph showing it's more active. The ideal would be for all four wheels to have identical colours and curves. In practice however the front wheel histograms will normally have a narrower peak than the rear wheel histograms.

Saleen Donington Damper Analysis
Good

Front Left

Front Right

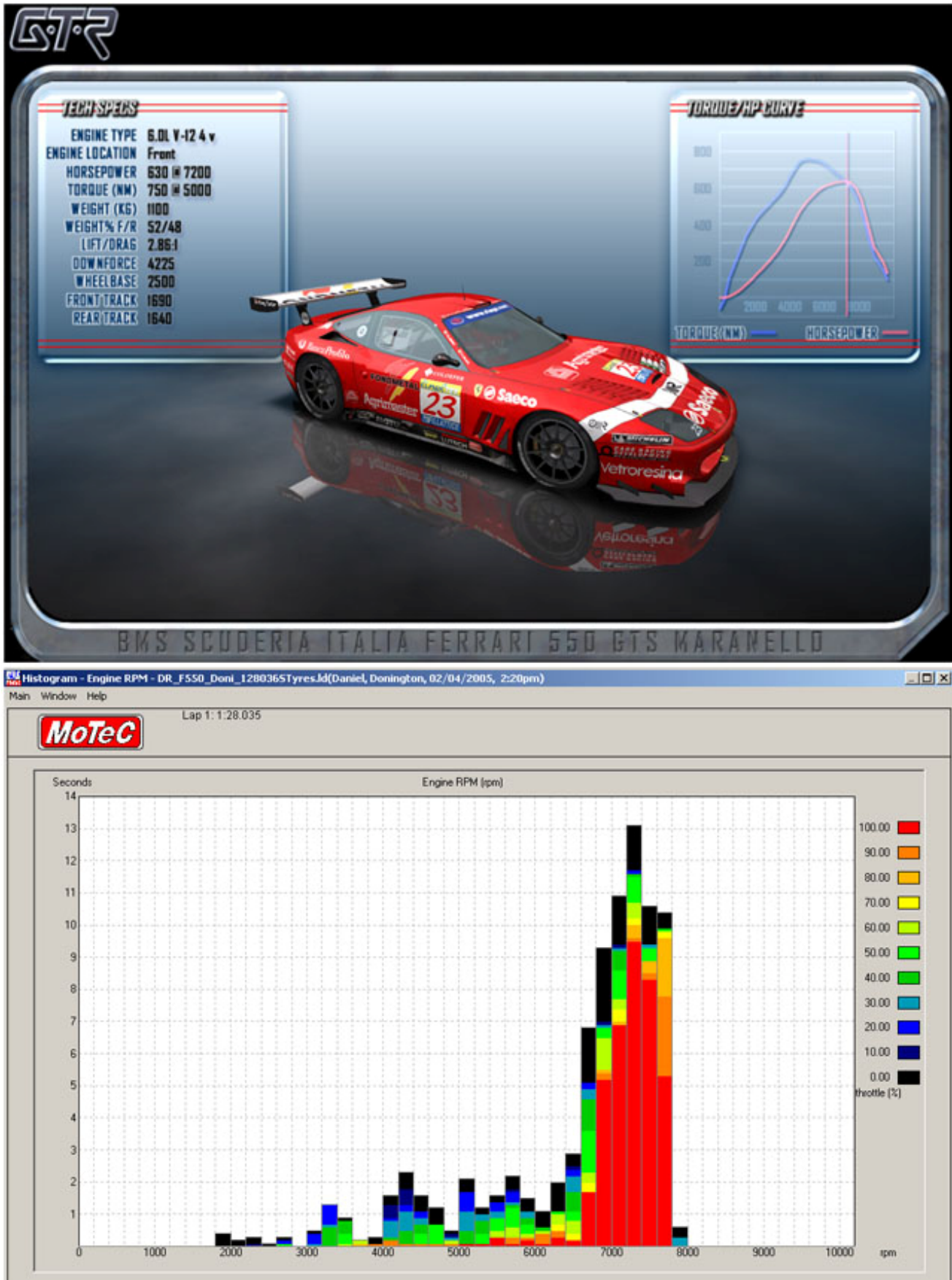Rear Left

Rear Right

Picture 6: Improved Saleen Suspension Example

This is just one tool however and should be used along with the graphical analysis and virtual dash for best results.

Engine Histograms

Picture 7: Ferrari 550 Maranello Engine RPM Histogram compared to showroom power curves.

There are also two histograms for analysing gear ratios during a lap. The Engine RPM template shows how long was spent during a lap at a particular engine RPM. The aim is to have the peak of this template at the point where peak power output is reached by the engine (Look at your car statistics in the GTR showroom to see where this should be). There will be a "tail" that falls away to the left of the graph. Try to make sure that this is as short as possible: You can do this by using shorter gear ratios but it also gives an indication of whether you're maybe driving too high a gear or not changing down to a low enough gear in time to keep the revs up.

Remember: As soon as the RPM fall away from peak power output and torque you're going to be losing time trying to accelerate back up to speed again.

The Gear Ratios template gives a picture of how well spaced your gear ratios are. Depending on the track it's normally best to ignore first gear but the other five gears should have equally spaced peaks between them showing that you have a balanced gear layout. This is really just a double check for the gear ratios you chose by looking at the gear and engine RPM traces on the GTR Analysis Graphical Template.

The Histogram templates are included within my Motec Interpreter Configuration file which you can download at the bottom of this guide.

Track Map
The track map gives you an overview of each lap showing your speed, gear, braking and accelerating. The really useful parts are under the reports tab.

Click on reports- track map. This will produce graphs of every lap you've done with maximum and minimum speeds for each sector. I use this to see if I'm being consistent in my driving. It's especially useful for tracks like Barcelona where you must carry the speed onto the straights to do good times.

Create a Rainbow map by selecting reports- rainbow map. Click the drop down box for each and select a parameter. They show broad outlines of where you may be dropping time, locking wheels etc but to be honest I don't find them that useful.

And now for the best bit of Motec. Click on reports- section times for a lap by lap break down. You can see exactly where you're making up or losing time. The fastest time is in Green and any time within 2% of it appears in red. The complete lap shows your fastest consecutive sections which form a full lap. The eclectic shows the theoretical best lap time you could achieve for a track using your fastest section times. Make a note of the best times and then look at the graphical analysis of that section of track to see why you were quicker.

Virtual Dashboard

This gives a real time run through of a recorded lap. You can't have it open on a seperate PC for real time telemetry however. Use the GTR template rather than the default main one because the default doesn't have all the parameters setup for GTR. This is nowhere near as useful as the similar function in GPL Replay Analyser.

Picture 8 : Motec Virtual Dashboard

The main use I've found for the virtual dash is to set the slow bump and rebound settings. Watch the G Force- Longitudinal vs. G Force- Lateral inlay and try to make it look as smooth and controlled as possible by adjusting the slow bump and rebound. The car will respond well to this when cornering and braking.

The G Force does show up one of GTR's limitations. Compare the Ken Douglas Bathurst lap in a Formula Ford to any GTR car lap and there's a world of difference. Different cars of course but I think it's an interesting comparison.

Following on from **Avidriders** post I've made a new virtual dash which shows suspension travel during the lap in real time. The best way I've found to use this is to watch problem parts of the track eg: the Triple and Bilstein at Oschersleben by advancing the file one frame at a time to see what's happening (Press Stop and then the single > on the bottom bar).

The files I've attached are:

Pieters Map Pack
Updated 09/01/05 Barcelona redrawn again!
updated 01/01/05 Enna can now be viewed in the virtual dash and the eclectic works at Barcelona. Also includes Motec maps for Spa Night Races
Unzip to c:\GTR\Motec\Track Maps overwriting the files in it.

My Current Graphical Analysis Configuration (19/06/05) including MMOS's Mathematics Templates
Updated 19/06/05 Fixed filter on Traction Circle XY Plot template
Updated 14/02/05 New Graphical Analysis layouts and templates to go with updated Motec Beginners Guide plus MMos's mathematics templates
Updated 20/01/05 Extra Graphical Suspension Templates plus the Engine Histogram and G-Force XY Plot shown in **Bogey Jammers** post.
Updated 25/12/04 Fixed error in Suspension Histogram.
Unzip both files to c:\GTR\Motec\Interpreter\Configurations. Load the Graphical Analysis Configuration by opening Motec select File- Interpreter Configuration- Load- Templates GTR Analysis140205.icf

Load **MMOS**'s Mathematics Template by opening Motec select File- Interpreter Configuration- Load- Mathematics-MosMath0.1.imc
You then have to go to View- Maths- User Constants- and change Con07 so that it reads Steering Lock and enter the value you use as steering lock in the GTR garage (eg: 13.5 where your steering lock is 13.5 degrees in GTR.) You need to remember to change this to match whichever setup you're analysing.
You can check this by clicking the File Details button within Motec going to Vehicle and the steering lock value used will be displayed there.

My Current Motec Virtual Dashboard
Unzip to c:\GTR\Motec\Telemetry\Views Open Virtual Dash in Motec and select View- Open- GTR2.tvw

MotecOrganizer by **2Fast4U**
Version 0.2.5 Beta
If you have problems with visual basic libraries, please download the Full Installer.

Sample Hot laps with Replay, Setup and Motec Data Attached.

GT Cars	NGT Cars
DR_Doni_GT2_130267.zip	DR_Spa_F360_22273.zip
DR_Doni_F550_127832.zip	DR_DoniGT3_13407.zip
DR_Spa_F550_210899.zip	DR_Spa_GT3_220359.zip
DR_Barce_F550_139451.zip	DR_Barce_GT3_14531.zip
DR_Enna_F550_130216.zip	DR_Brno_GT3_202380.zip
	DR_Estoril_GT3_14053.zip
	DR_Oschersleben_GT3_12792.zip
	DR_Enna_GT3_13710.zip
	DR_Magny_GT3_140038.zip
	DR_Anderstorp_GT3_131675.zip
	DR_Monza_GT3_151197.zip

Unzip each file to a temporary folder and then copy them to these paths.
The .svm file setup goes to C:\GTR\Userdata\(Player Name)Folder\Settings\(Track name)Folder
The .vcr file replay goes to C:\GTR\Replaydata
The Motec reference file goes to C:\GTR\Motec\Reference Laps.
These are intended simply to give some different data to look at within Motec.

Appendix 1
Graph Hot Keys

Cursor		
	Action	*Function*
Mouse	Left click on graph	Reposition cursor to mouse position
	Left drag on graph	Move cursor to mouse position
Keyboard	A	Animate cursor
	Left or right arrow	Move cursor left or right (small)
	Ctrl left or right arrow	Move cursor left or right (large)
	Home	Move cursor to start of window
	End	Move cursor to end of window

Components		
	Action	*Function*
Keyboard	C	Cross hairs show/hide
	E	Error & Status details show/hide
	L	Graph label show/hide
	O	Font size small/large
	S	Section markers show/hide
	T	Track map show/hide
	V	Values box show/hide

Zoom		
	Action	*Function*
Mouse	Double Click - Move - Left Click	Zoom In (horizontal)
	Alt & Double Click - Move - Left Click	Zoom In (vertical)
	Shift & Double Click - Move - Left Click	Show zoom area statistics
	Ctrl & Double Click - Move - Left Click	2D zoom (vertical scale holds only for one zoom)
	Shift & Alt & Double Click - Move	Optional update of Histogram and X-Y Plot with
	– Left Click	data from zoomed area

Keyboard		
	Action	*Function*
Keyboard	Up arrow	Zoom In
	Down arrow	Zoom Out
	R	Refocus to last zoom
	F2	Expand to full session
	W	Expand to full current lap
	N	Jump to same zoom on next lap
	P	Jump to same zoom on previous lap
	F	Jog zoom area forwards
	B	Jog zoom area backwards

General		
	Action	*Function*
Mouse	Right click on parameter label	Show popup menu (this parameter only)
	Right click elsewhere	Show popup menu (general)
Keyboard	F3	Toggle overlay variance between none, instantaneous and cumulative
	F4	Hide/Show overlay
	Shift+F4	Select Overlay Files and Laps
	F5	Edit Templates
	F7	Select Template
	F8	Select Lap
	F9	Toggle X axis - Time or distance
	F11	Select Previous Template
	F12	Select Next Template
	1 - 10	Select Templates 1 to 10
	Shift + (1 – 10)	Select Templates 11 to 20
	Ctrl + (1 – 10)	Select Templates 21 to 30
	G	Toggle graph format - single or multiple

Ingame Sampling Rates

You check this by browsing to C:\GTR\UserData\#playername and renaming the #playername.plr file to #playername.txt. (You can also right click and select "open with" Notepad). The lines concerning Motec should appear as below:

Data Acquisition Version="0" // Version of vehicle data to write out
Data Acquisition Rate="10" // rates 1, 2 ,5, *10*, 20, 50, 100
Data Acquisition In Race="1"
Data Acquisition EXE="C:\GTR\MoTeC\Interpreter\MINTWIN.EXE"
Data Acquisition File="userdata\vehicledata.spt"
MoTeC LogFolder="C:\GTR\MoTeC\Logged Data"
MoTeC Minimum Time="20" // minimum MoTeC recording time (sec)
MoTeC Multiple Logs="1" // generate unique filename for each new log

Remember to rename it back to .plr from .txt afterwards.

Anyway I'm bored of this now and off to do some more laps of GTR 😊