

# F1 2011 India (Practice)\* A Statistical Graphics Review

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\*Source data used to generate this report was obtained from the Timing Information press releases published via the F1/FIA Media Centre

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# 1 Free Practice Summary

What went on in the free practice sessions?

## 1.1 Session Utilisation Charts

**Session utilisation charts** are an experimental chart type that show how each team made use of the practice sessions, identifying the time during the session when a lap time was recorded. The combined session utilisation chart shows the extent to which each car goes out, as well as using colour to denote stint length. There are some issues with the combined chart I need to fix: the cars need to be identified as factors, thus removing non-existent car 13, and each car needs labelling (and ordering numerically) and highlighting with a minor(?) gridline. Add grey horizontal lines between each team to highlight the teams (so lines at 2.5:23.5 step 2).

## 1.2 Session comparison chart (lap time, speed, position)

The **quickest lap comparison**, **fastest speed comparison** and **position comparison** charts summarise the best times/speeds recorded in each session along with the standings. The quicker cars are the ones near the bottom of the fastest lap chart and the top of the speed chart. Note that the name labels for the race drivers are used to identify the *car* that participated in each session. Some teams may utilise a third driver in the earlier practice sessions.

Looking across the *Classification* rows and down the columns, there should be at most once instance of each symbol (evidence of that classified position for each of the sessions) in each row and column. If there is a symbol missing, it may be hidden beneath one of the larger symbols. So for example, if the same car was placed third in free practice 2 and 3, we would only see the larger square denoting the FP3 classification. (I wonder - can I specify the layer/height of a symbol as an aesthetic variable?)

**To do** Add unit gridlines and labels to the position chart. Is it maybe worth including some sort of long stint summary?

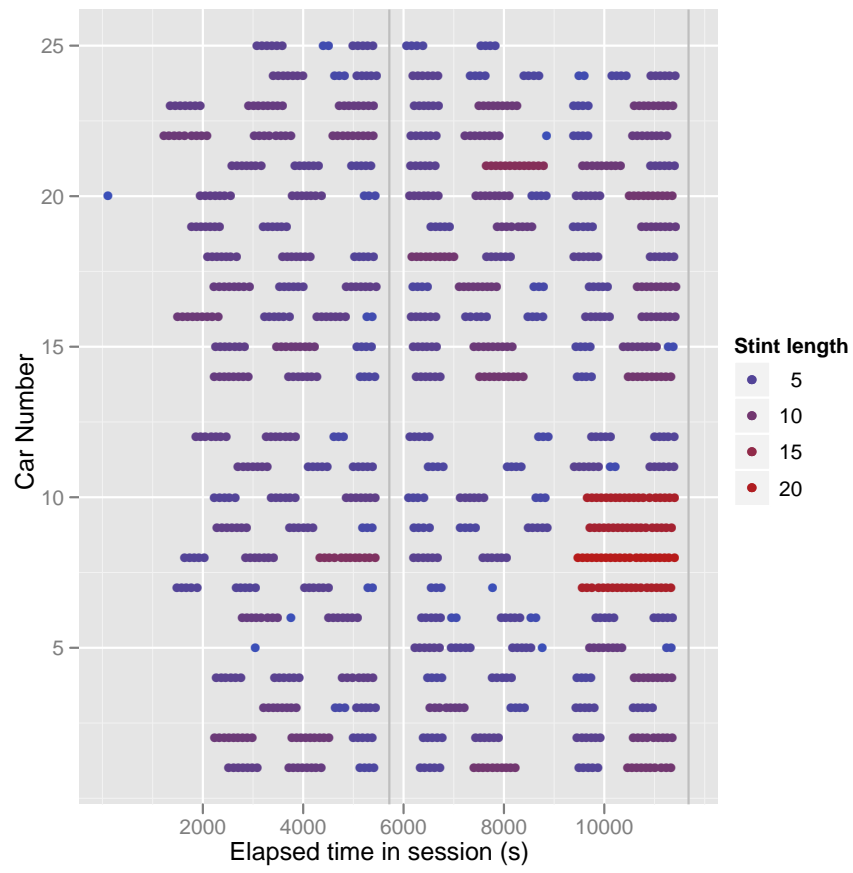


Figure 1: FP1-3 Session Utilisation

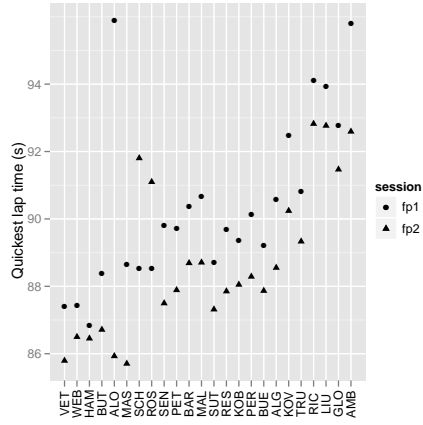


Figure 2: Free Practice 1-3: Fastest lap comparison

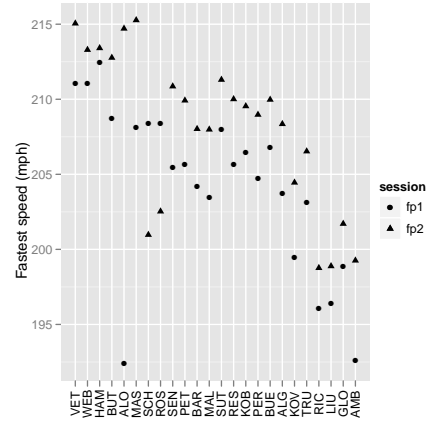


Figure 3: Free Practice 1-3: Fastest speed comparison

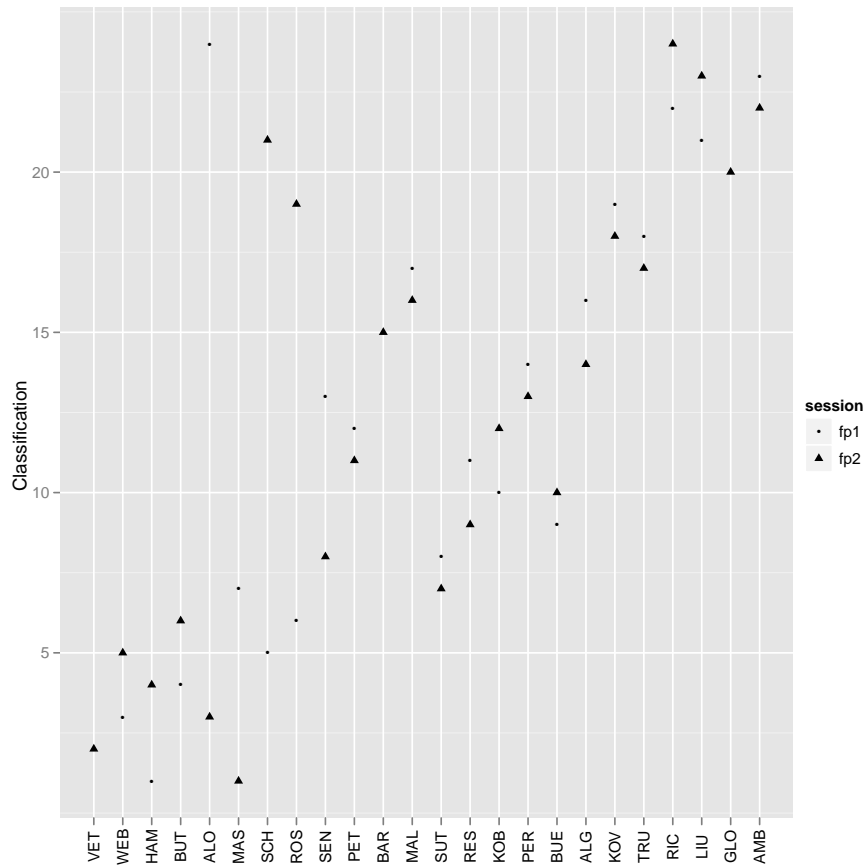


Figure 4: Free Practice 1-3: Classification comparison

## 2 Team Analyses

The *Team Analysis* reports provide a set of charts summarising the activity of each team during each practice session, in particular the range of lap times and their distribution, by stint.

I'm not sure the lap time distribution chart is that useful?

**To do** Need a table for each team showing fastest lap per stint, and maybe some sort of summary of 'fast times', esp. in longer stints (so eg more than  $N$  laps within  $X\%$  of the fastest lap recorded by that team in that session?)

I use the following identifiers for the teams:

- **RBR:** *Red bull Racing*
- **MCL:** *McLaren*
- **FER:** *Ferrari*
- **MER:** *Mercedes*
- **REN:** *Renault*
- **WIL:** *Williams*
- **FOR:** *Force India*
- **SAU:** *Sauber*
- **TOR:** *Toro Rosso*
- **LOT:** *Team Lotus*
- **HRT:** *HRT*
- **VIR:** *Marussia Virgin*

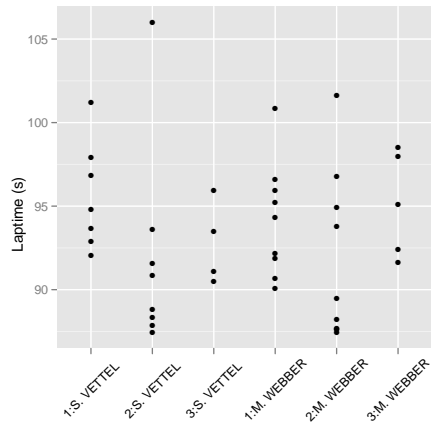


Figure 5: FP1 RBR Laptimes

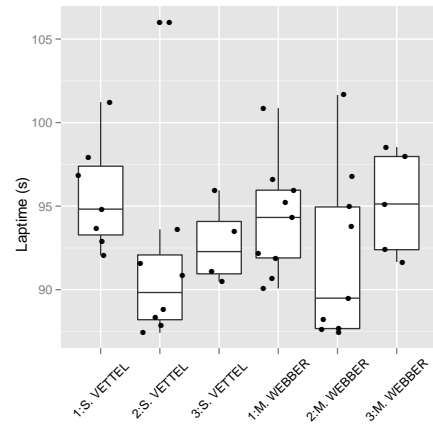


Figure 6: FP1 RBR Laptimes distribution

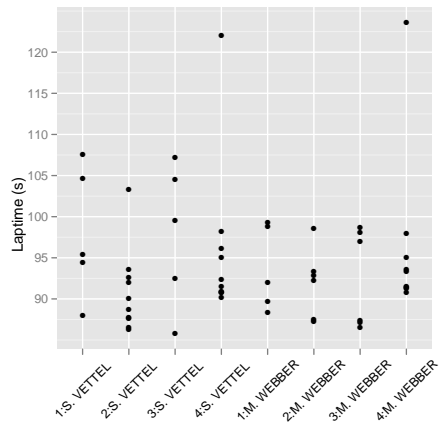


Figure 7: FP2 RBR Laptimes

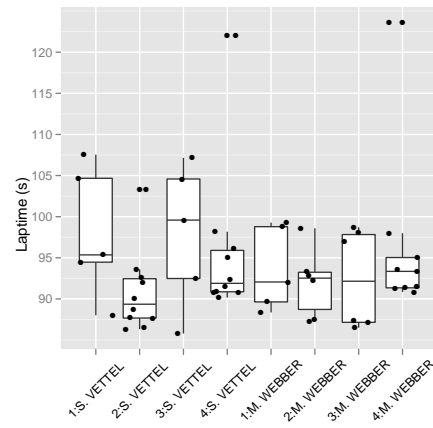


Figure 8: FP2 RBR Laptimes distribution



Figure 9: FP3 RBR Laptimes

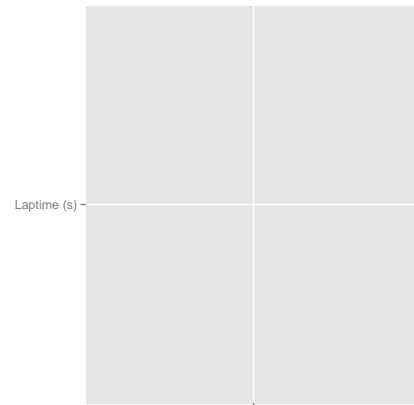


Figure 10: FP3 RBR Laptimes distribution

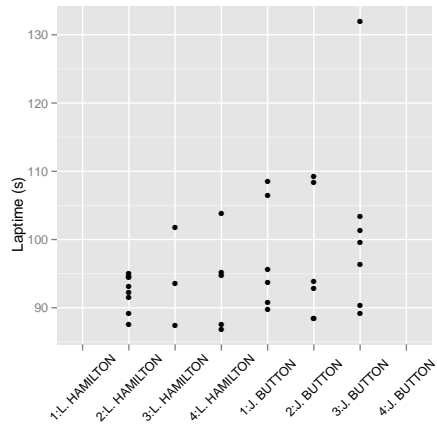


Figure 11: FP1 MCL Laptimes

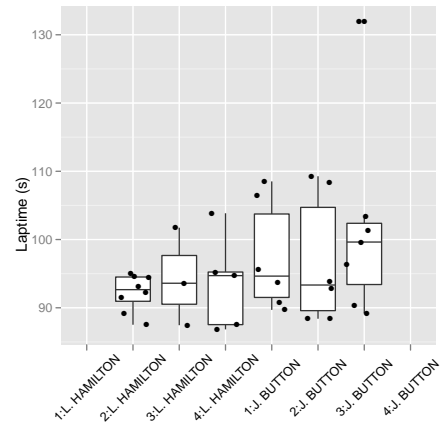


Figure 12: FP1 MCL Laptime distribution

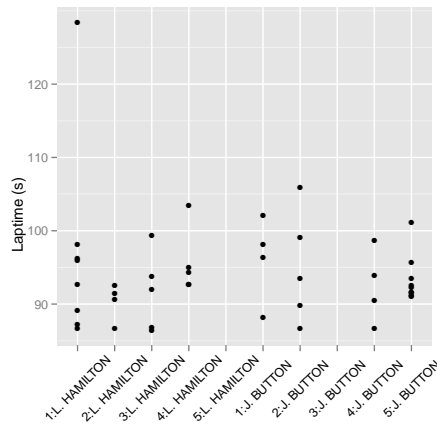


Figure 13: FP2 MCL Laptimes

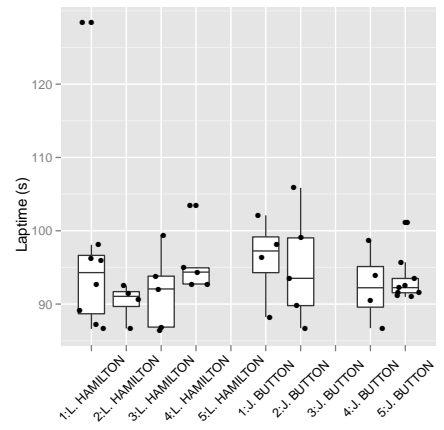


Figure 14: FP2 MCL Laptime distribution



Figure 15: FP3 MCL Laptimes

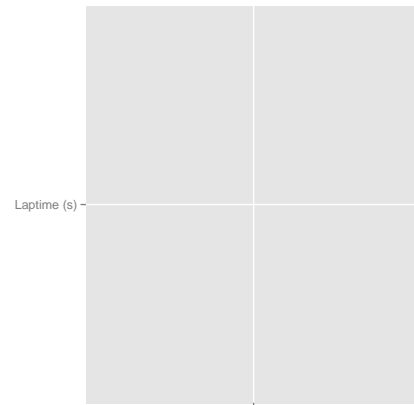


Figure 16: FP3 MCL Laptime distribution

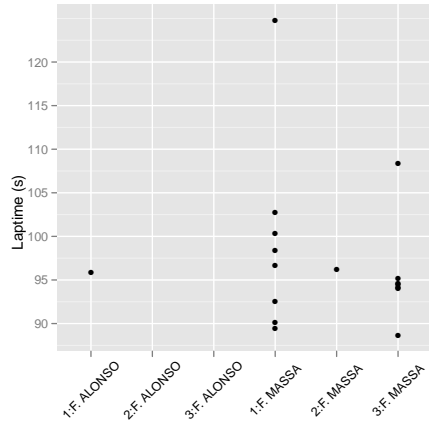


Figure 17: FP1 FER Laptimes

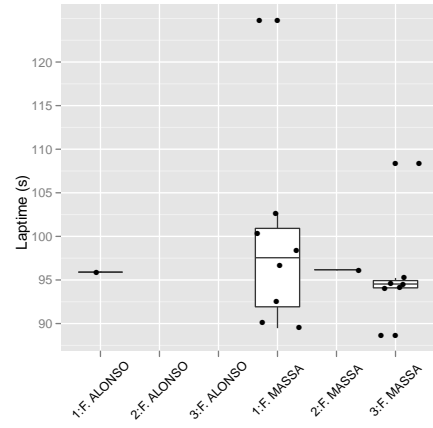


Figure 18: FP1 FER Laptime distribution

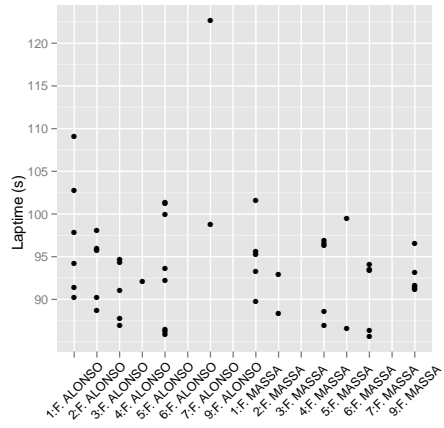


Figure 19: FP2 FER Laptimes

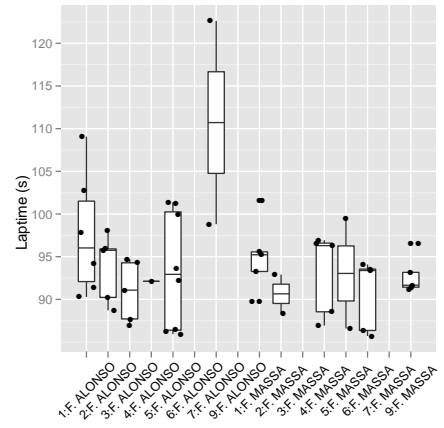


Figure 20: FP2 FER Laptime distribution



Figure 21: FP3 FER Laptimes

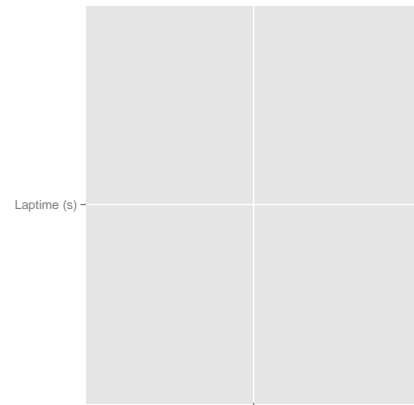


Figure 22: FP3 FER Laptime distribution



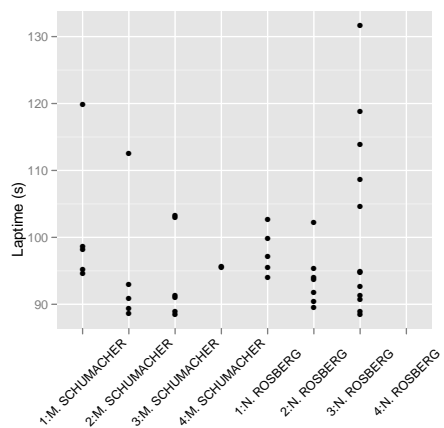


Figure 23: FP1 MER Laptimes

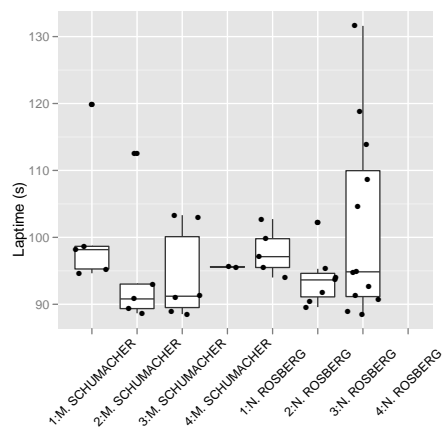


Figure 24: FP1 MER Laptime distribution

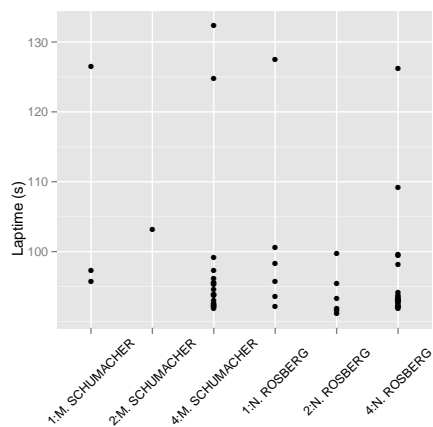


Figure 25: FP2 MER Laptimes

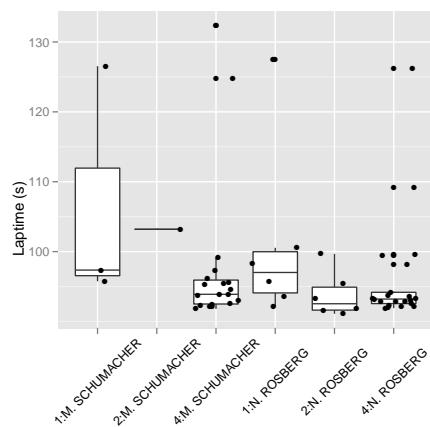


Figure 26: FP2 MER Laptime distribution

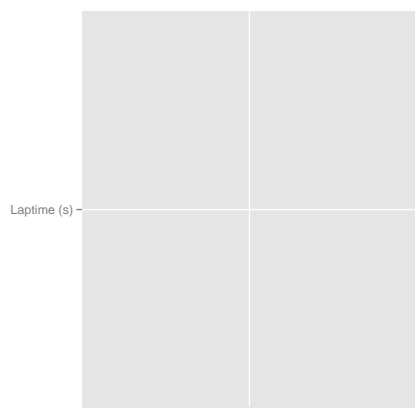


Figure 27: FP3 MER Laptimes

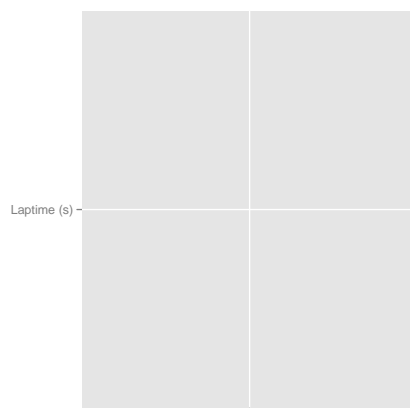


Figure 28: FP3 MER Laptime distribution

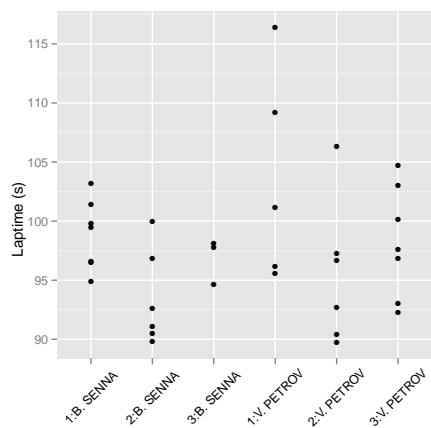


Figure 29: FP1 REN Laptimes

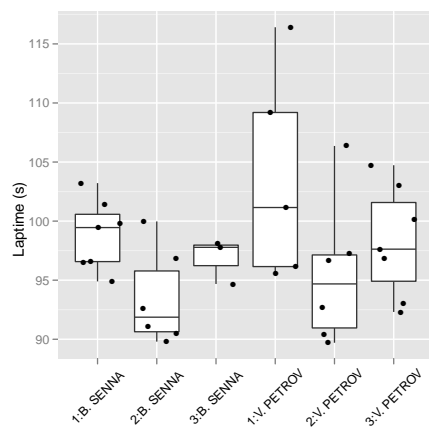


Figure 30: FP1 REN Laptime distribution

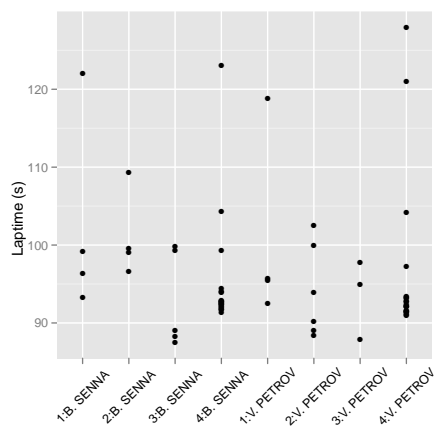


Figure 31: FP2 REN Laptimes

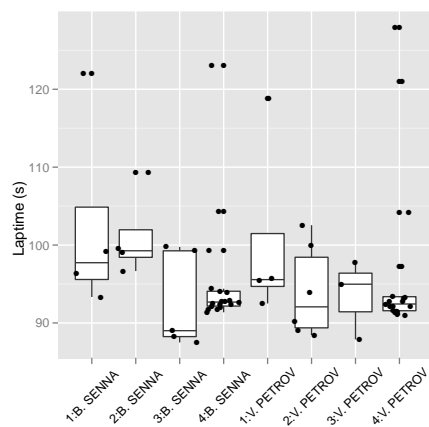


Figure 32: FP2 REN Laptime distribution

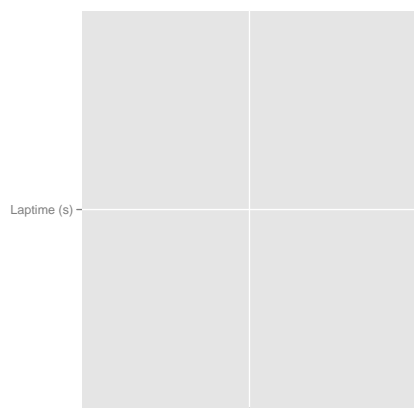


Figure 33: FP3 REN Laptimes

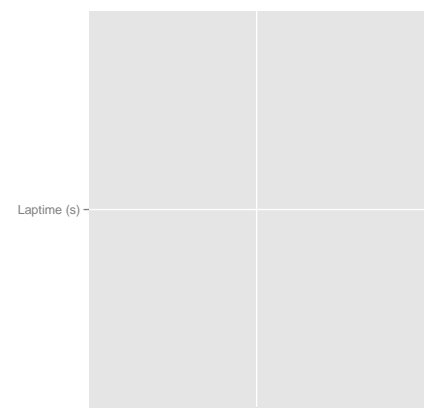


Figure 34: FP3 REN Laptime distribution

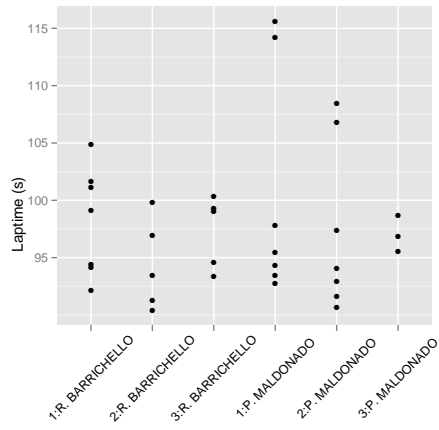


Figure 35: FP1 WIL Laptimes

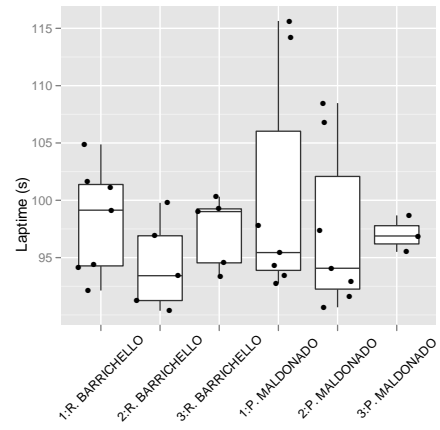


Figure 36: FP1 WIL Laptime distribution

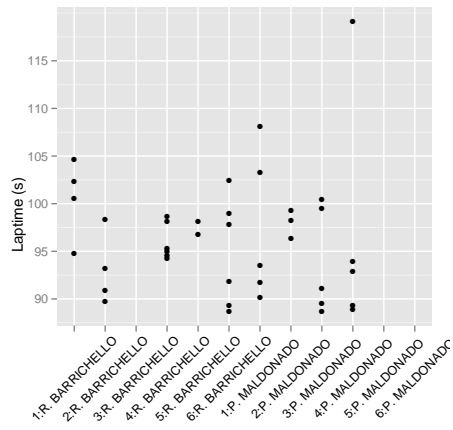


Figure 37: FP2 WIL Laptimes

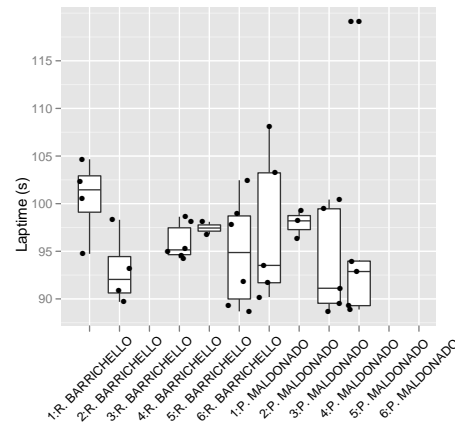


Figure 38: FP2 WIL Laptime distribution

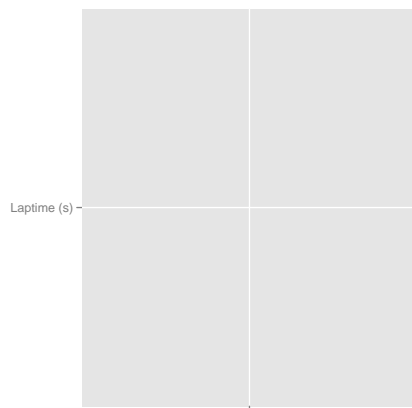


Figure 39: FP3 WIL Laptimes

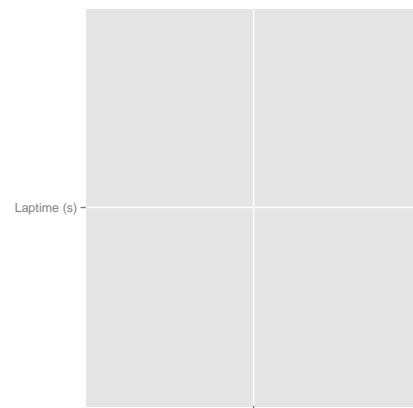


Figure 40: FP3 WIL Laptime distribution

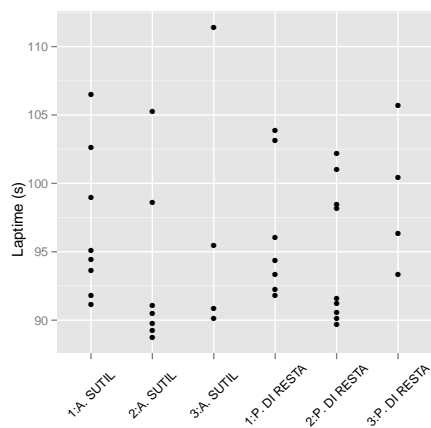


Figure 41: FP1 FOR Laptimes

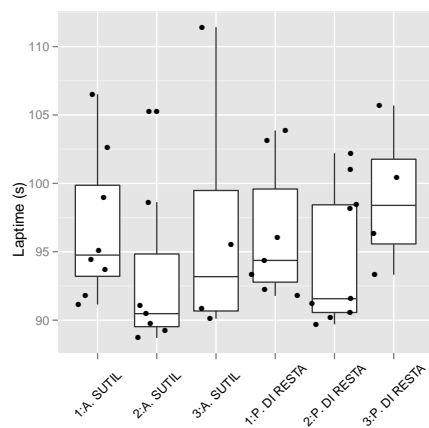


Figure 42: FP1 FOR Laptime distribution

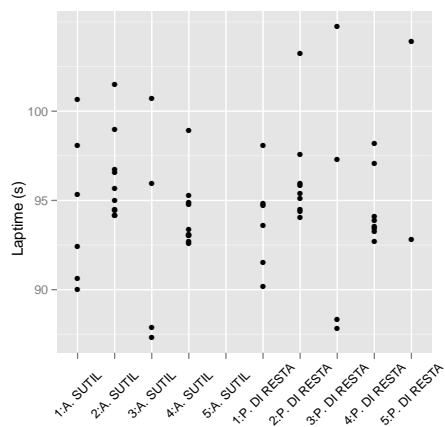


Figure 43: FP2 FOR Laptimes

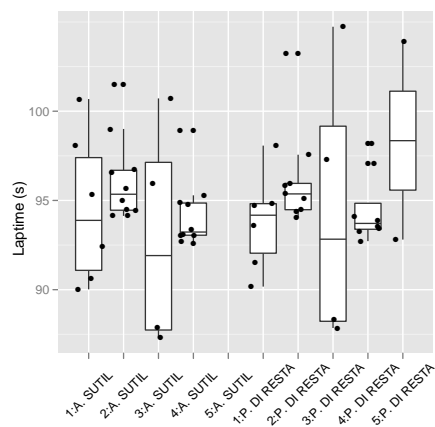


Figure 44: FP2 FOR Laptime distribution

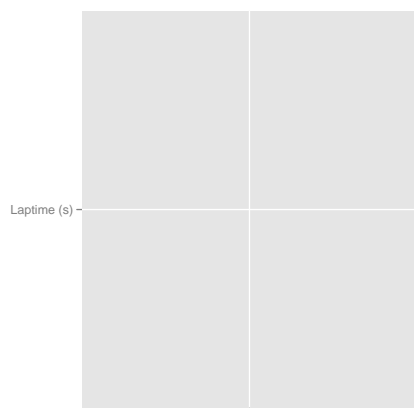


Figure 45: FP3 FOR Laptimes

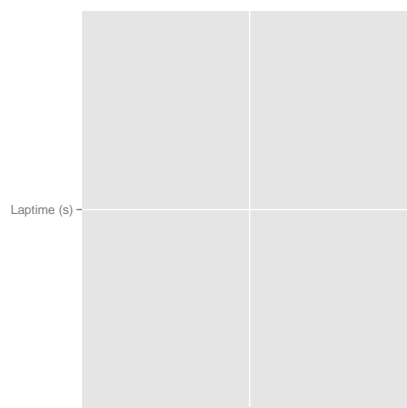


Figure 46: FP3 FOR Laptime distribution

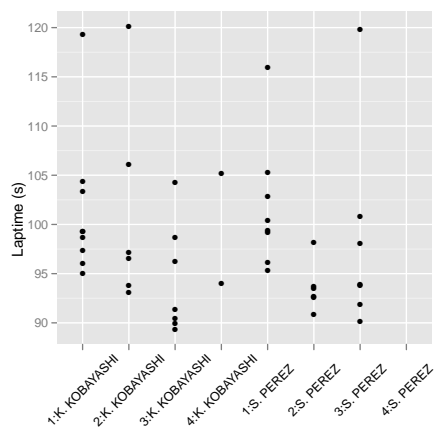


Figure 47: FP1 SAU Laptimes

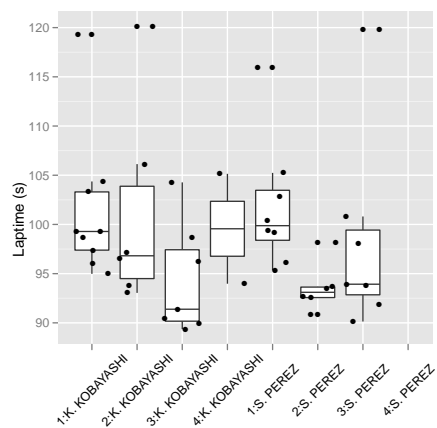


Figure 48: FP1 SAU Laptime distribution

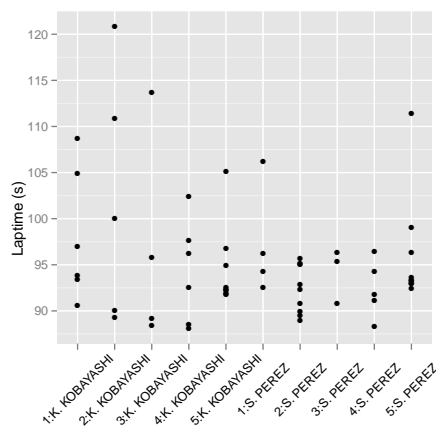


Figure 49: FP2 SAU Laptimes

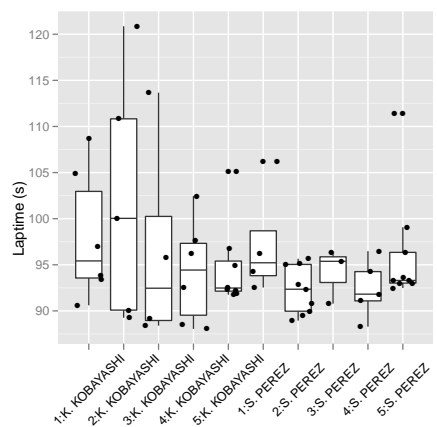


Figure 50: FP2 SAU Laptime distribution

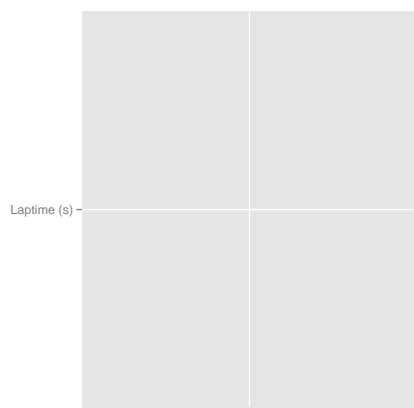


Figure 51: FP3 SAU Laptimes

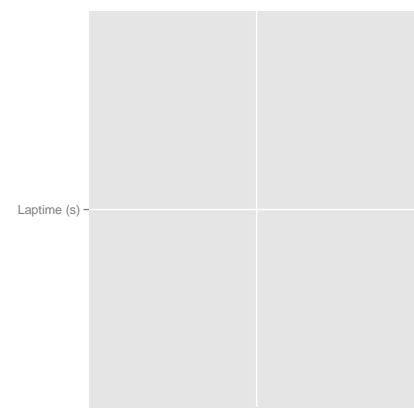


Figure 52: FP3 SAU Laptime distribution

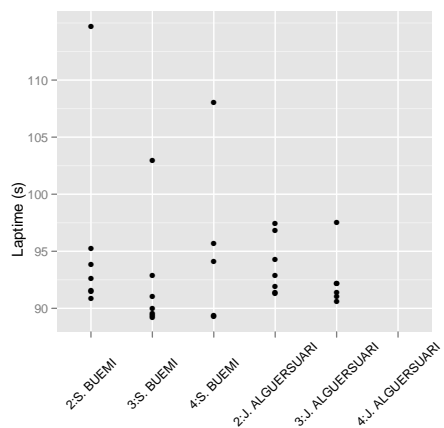


Figure 53: FP1 TOR Laptimes

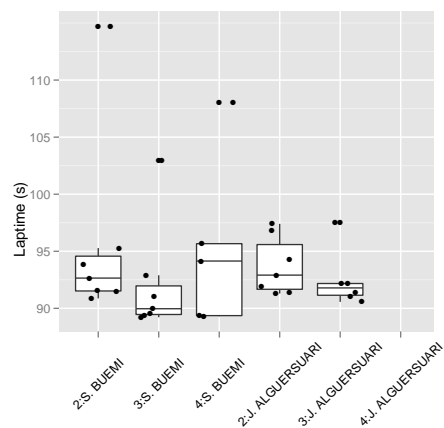


Figure 54: FP1 TOR Laptime distribution

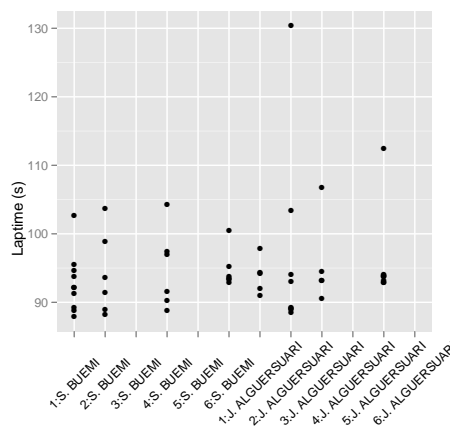


Figure 55: FP2 TOR Laptimes

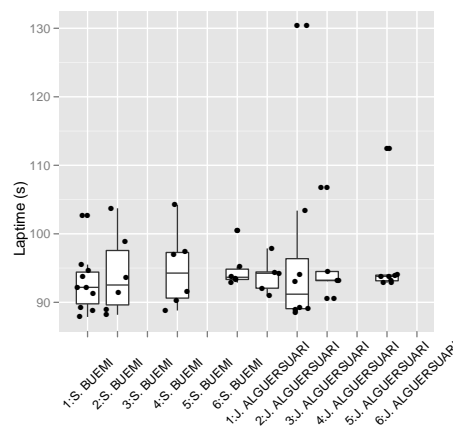


Figure 56: FP2 TOR Laptime distribution

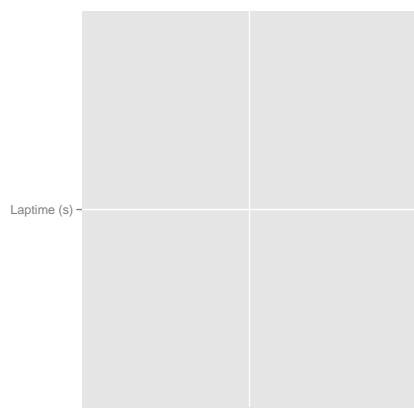


Figure 57: FP3 TOR Laptimes

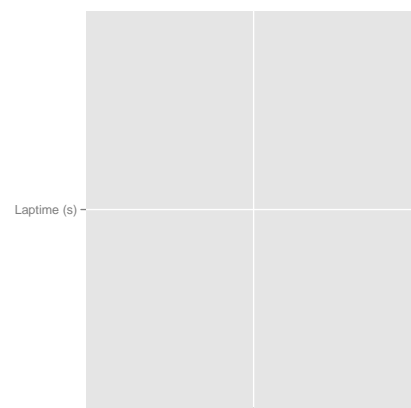


Figure 58: FP3 TOR Laptime distribution

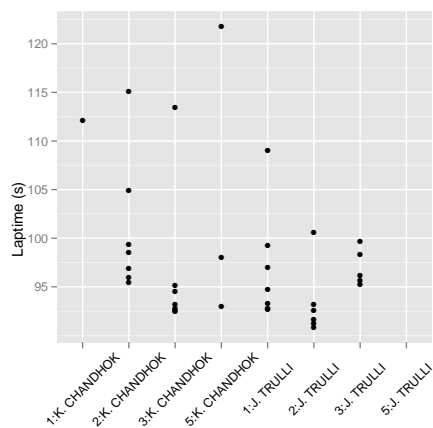


Figure 59: FP1 LOT Laptimes

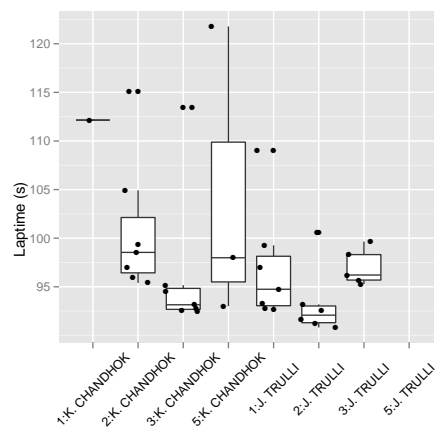


Figure 60: FP1 LOT Laptime distribution

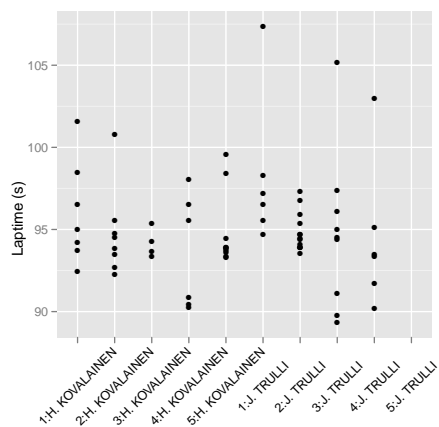


Figure 61: FP2 LOT Laptimes

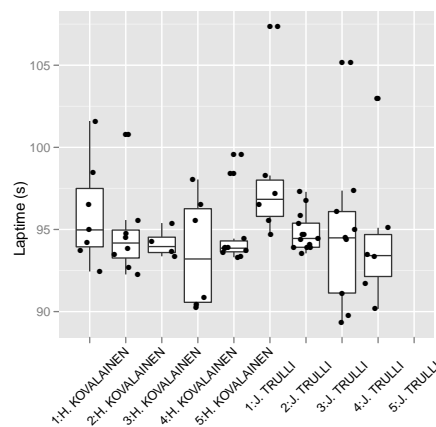


Figure 62: FP2 LOT Laptime distribution

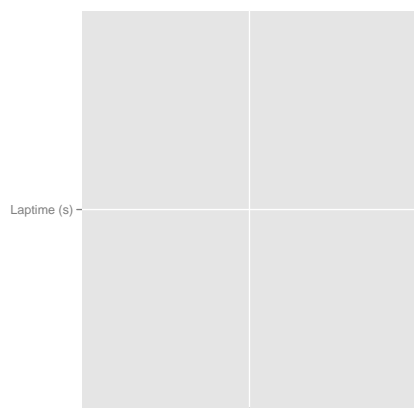


Figure 63: FP3 LOT Laptimes

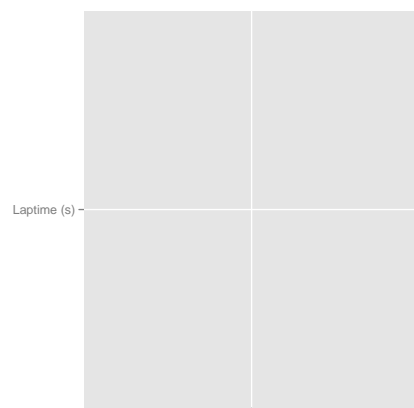


Figure 64: FP3 LOT Laptime distribution

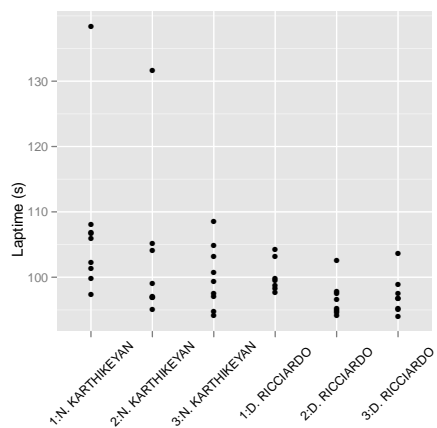


Figure 65: FP1 HRT Laptimes

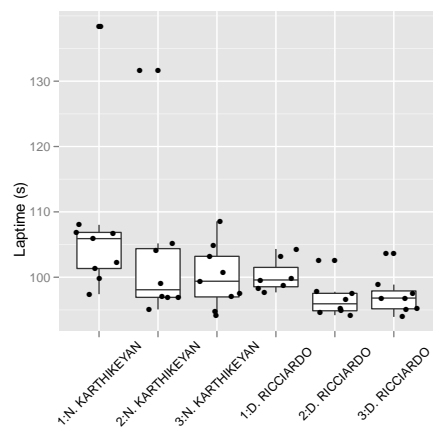


Figure 66: FP1 HRT Laptime distribution

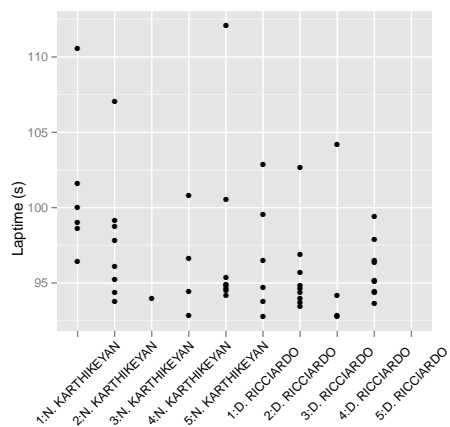


Figure 67: FP2 HRT Laptimes

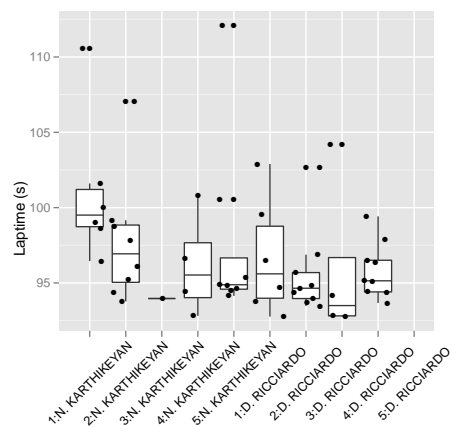


Figure 68: FP2 HRT Laptime distribution

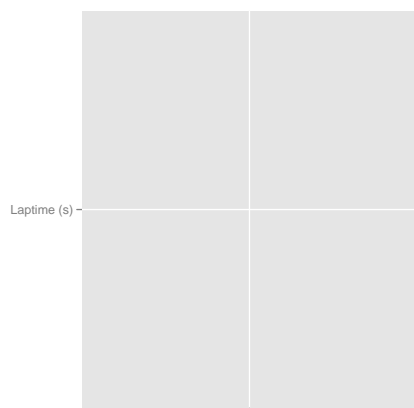


Figure 69: FP3 HRT Laptimes

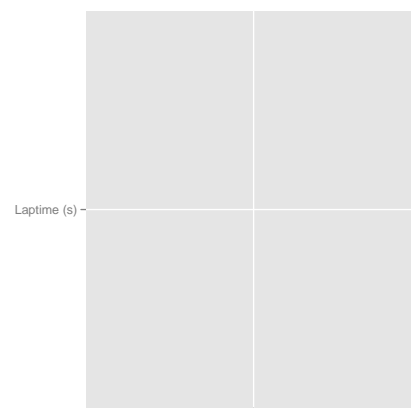


Figure 70: FP3 HRT Laptime distribution



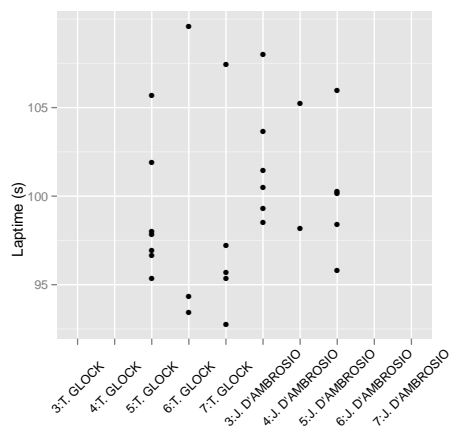


Figure 71: FP1 VIR Laptimes

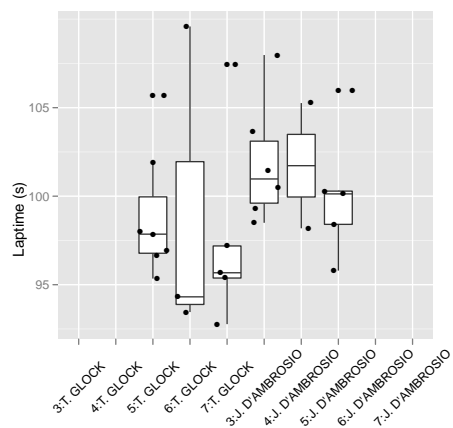


Figure 72: FP1 VIR Laptime distribution

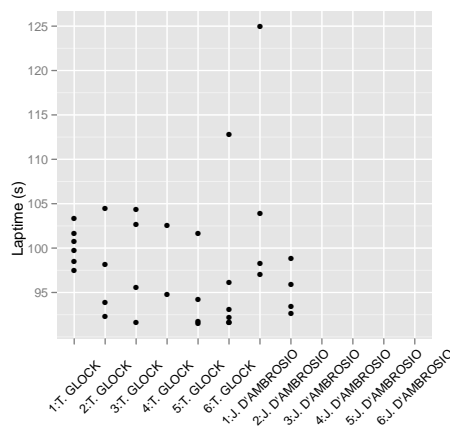


Figure 73: FP2 VIR Laptimes

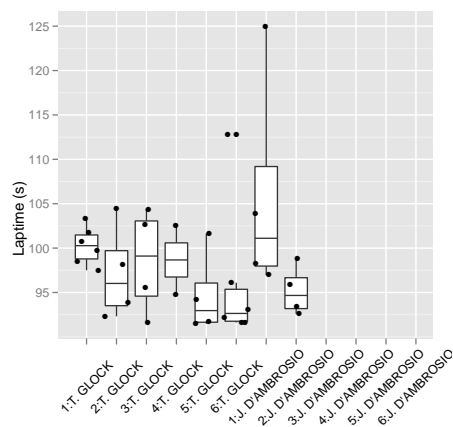


Figure 74: FP2 VIR Laptime distribution

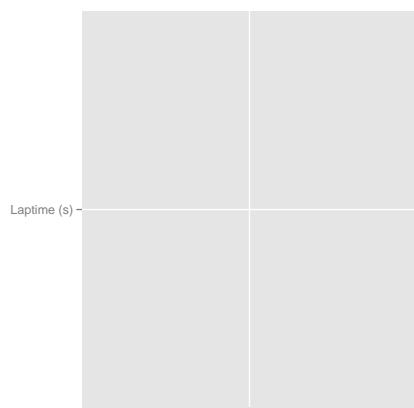


Figure 75: FP3 VIR Laptimes

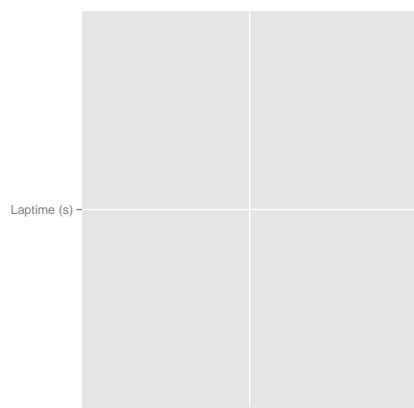


Figure 76: FP3 VIR Laptime distribution