Multivarate Permuation Analysis

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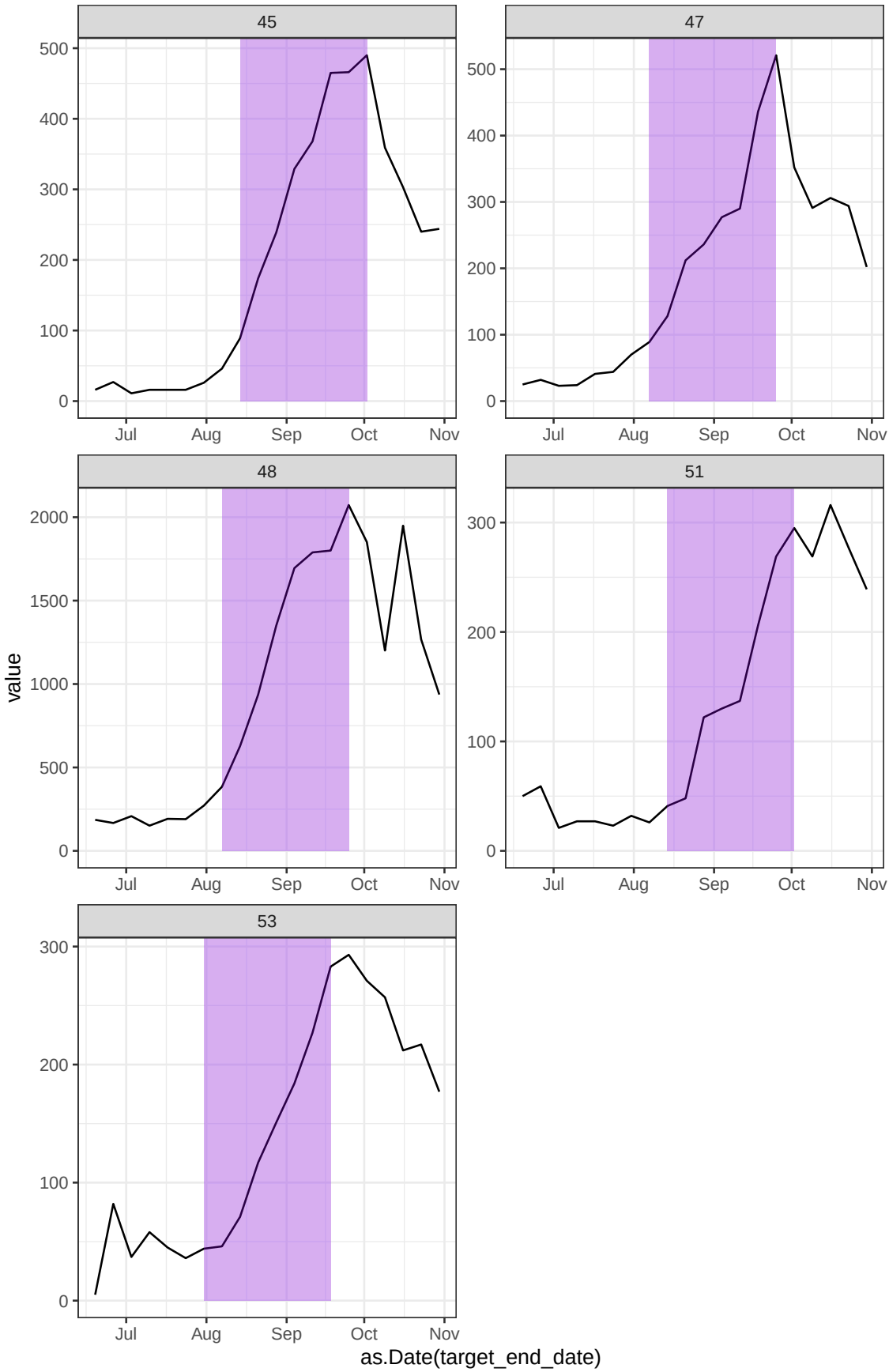
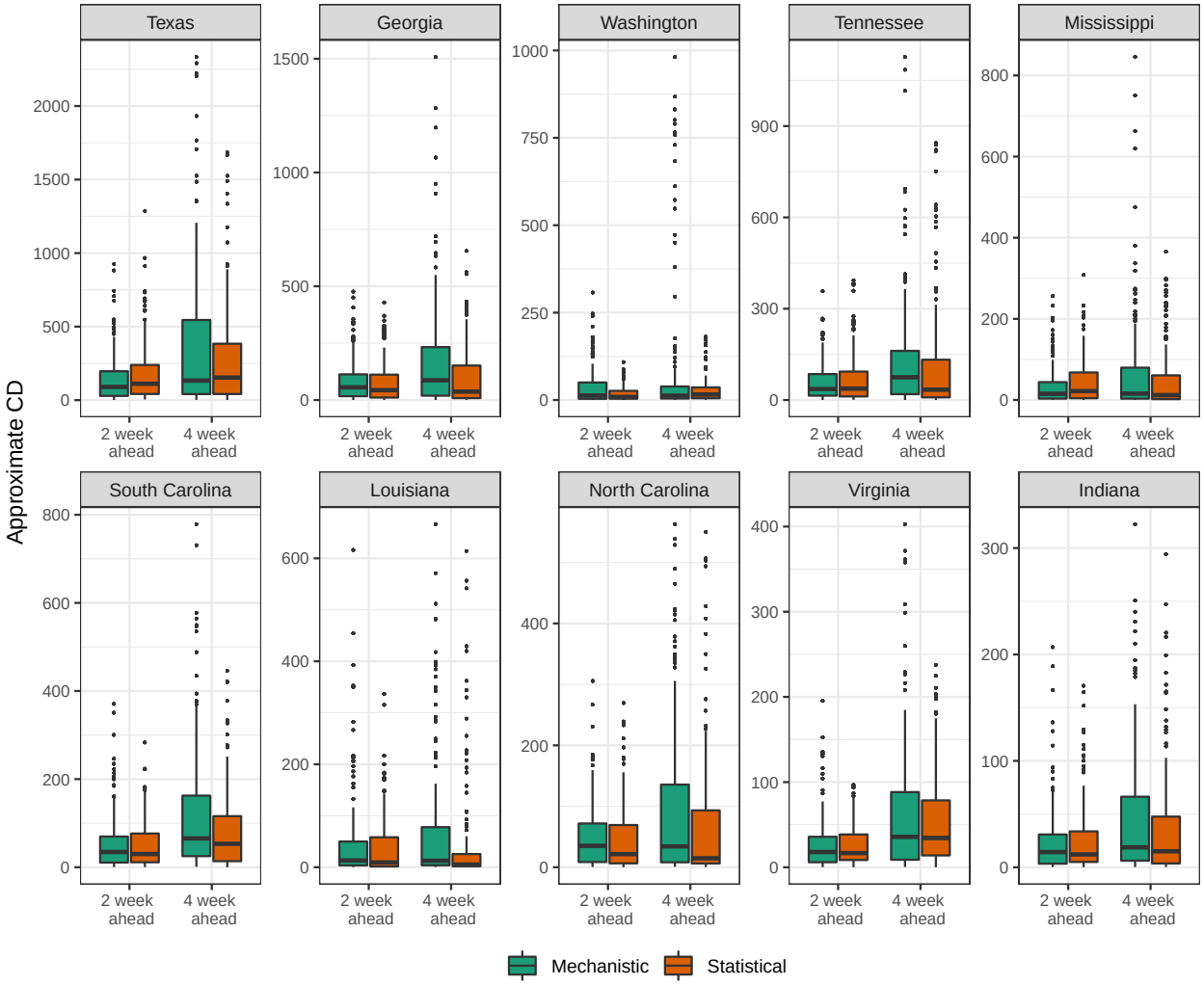
Similarity by type during the winter 2020/2021 wave

The Delta wave in the fall? 8 weeks of increasing with not more than 2 negative growths, averaging more than 200 deaths during 2021-06-15 and 2021-11-01 period (this is location criteria). Take overall submissions (total submission during overall during the period in the overall analysis) into account to indicate some commitment - at 70 percents of the max of 344 sub in each location during may 2 2020 and 2021 dec 18 - excluding baseline model.

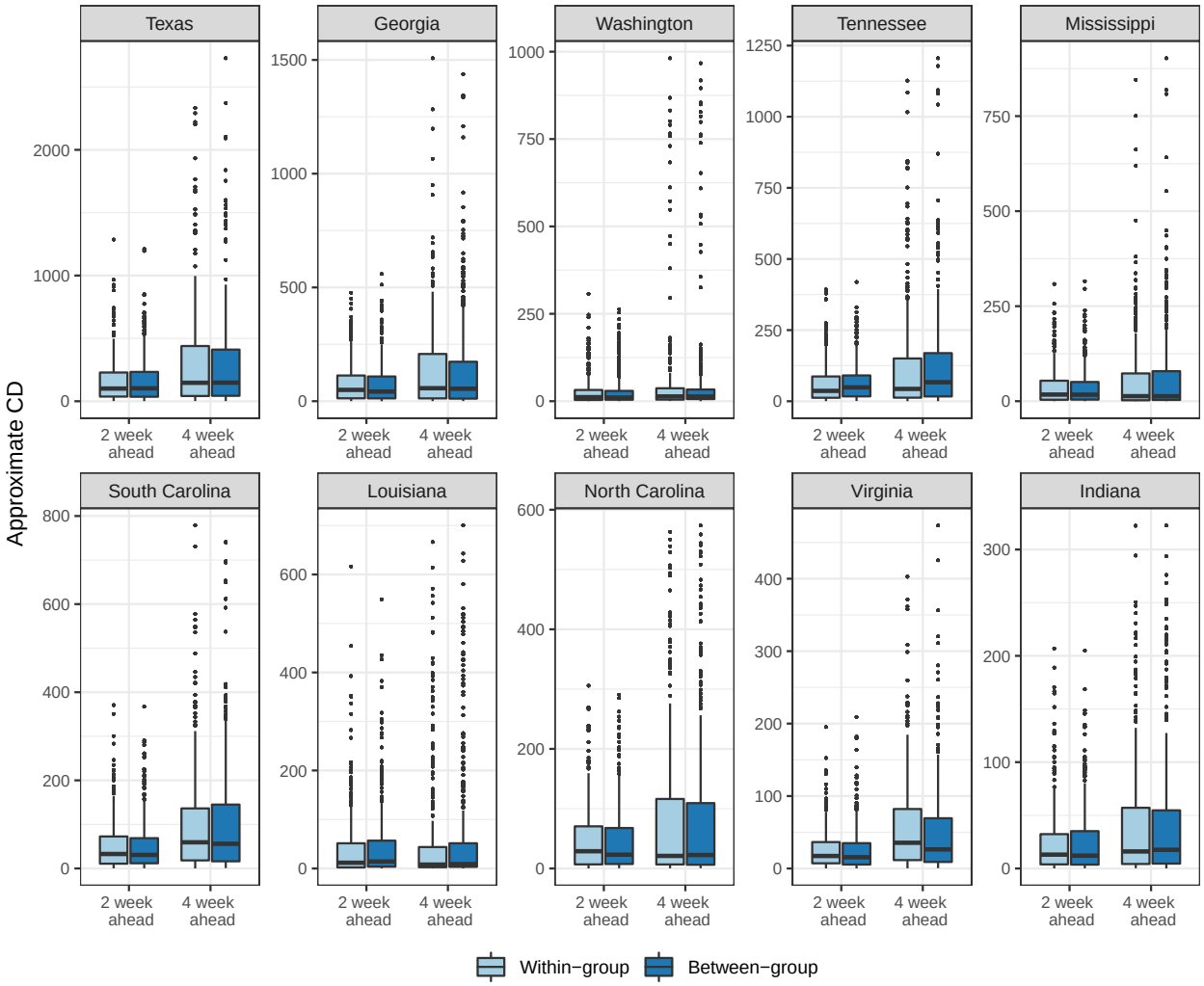

45
47
48
51
53
value
as.Date(target_end_date)
Jul
Aug
Sep
Oct
Nov

Boxplots of approx. CDs by categories

(a) Within−group approx. CDs by model types

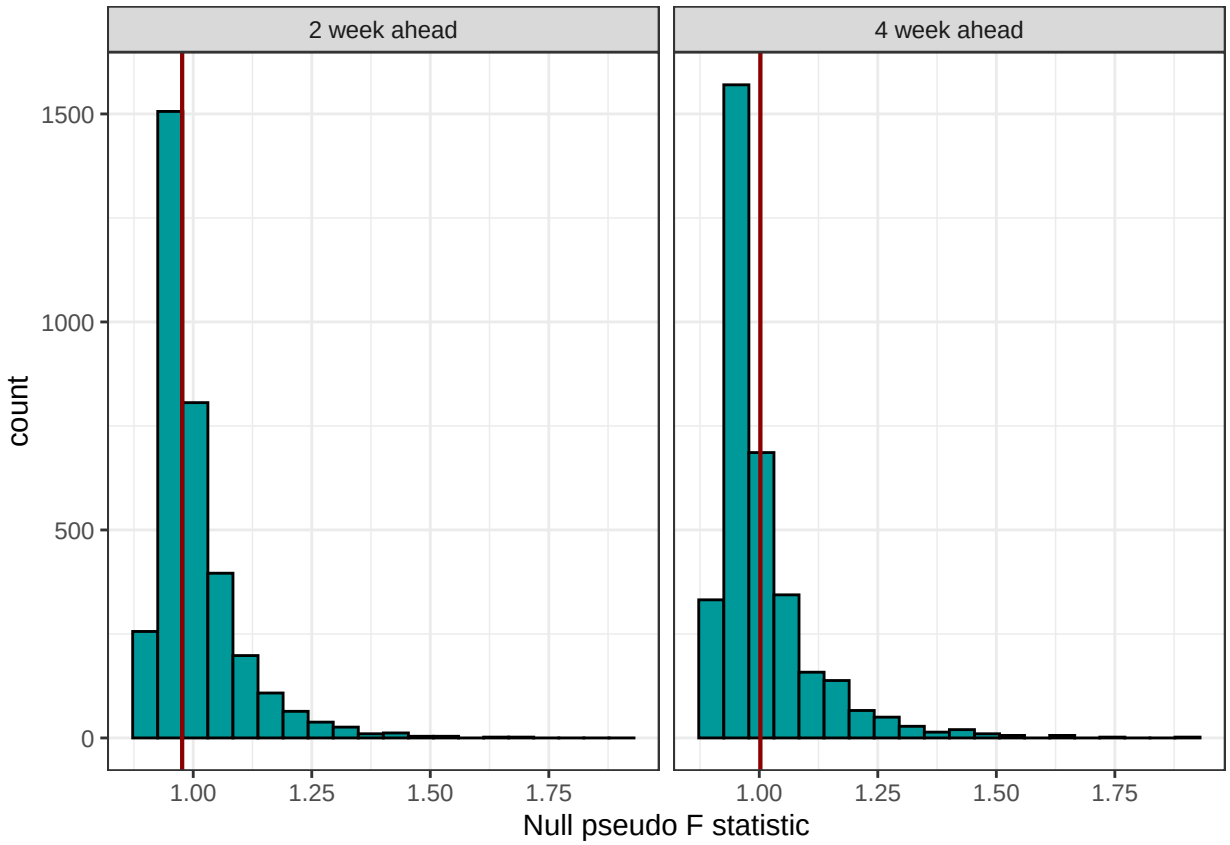


(b) Within− and between−group approx. CDs



Distribution of Test Statistics

Now that dates are irrelevant, more emphasis on locations.




```
{r} # ggplot(perm_statsl) + #   geom_histogram(aes(x=h2),bins=20,fill="d
+ #   geom_vline(xintercept = perm_statsl$h2_real[1])+ #   #
annotate("text", label = paste0(c(expression("R"["CD"]),round(perm_stats
#   #          x = 1.12, y = 320, size = 4, colour = "black")+
#   xlab("Test statistic")+ #   theme_bw() # ggplot(perm_statsl)
+ #   geom_histogram(aes(x=h4),bins=20,fill="darkgreen") +
#   geom_vline(xintercept = perm_statsl$h4_real[1])+ #   #
annotate("text", label = paste0(c(expression("R"["CD"]),round(perm_stats
#   #          x = 1.18, y = 320, size = 4, colour = "black")+
#   xlab("Test statistic")+ #   theme_bw() #
```

```
FALSE [1] "p-value for 2 wk horizon is 0.495337995337995"
```

```
FALSE [1] "p-value for 4 wk horizon is 0.337412587412587"
```