

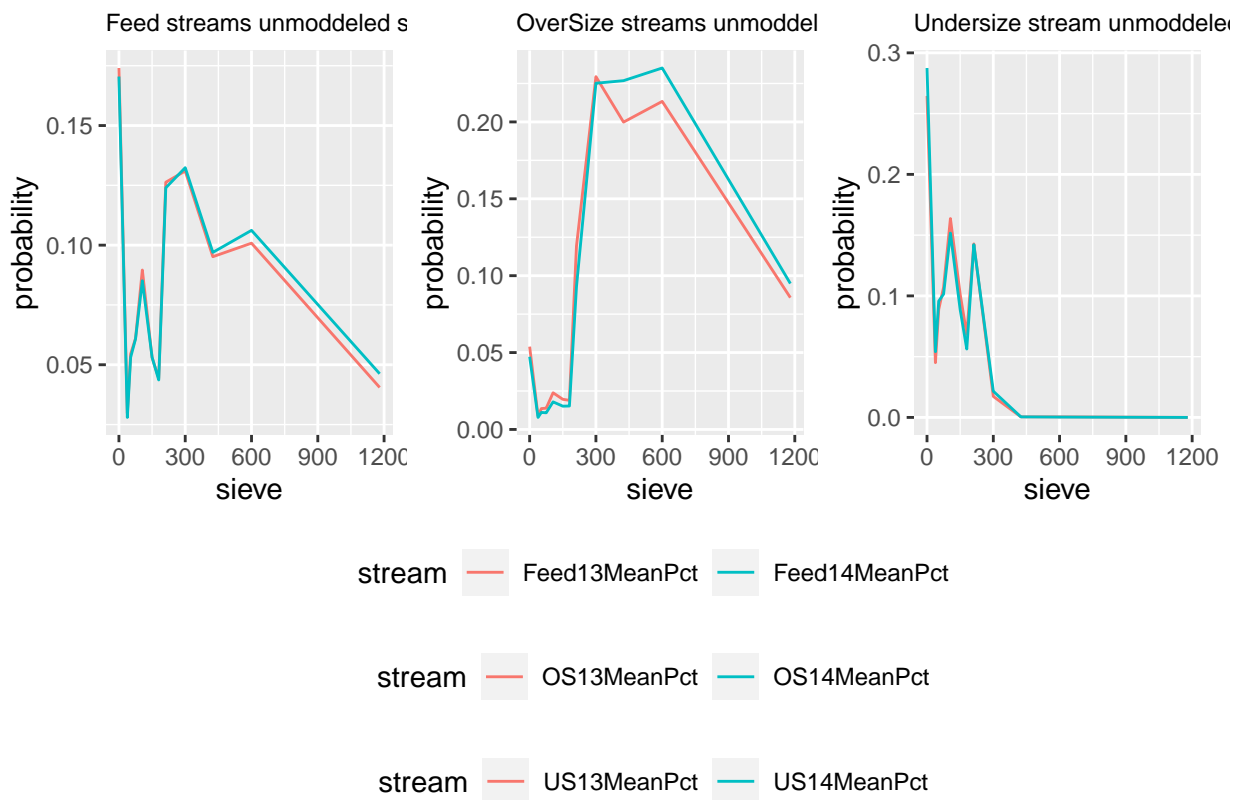
side by side plots

Aim is not to reprint plot's axes for each plotted side-by-side plot as they are the same..can be a common axis/axes.

<https://stackoverflow.com/questions/13649473/add-a-common-legend-for-combined-ggplots> ## method 1

Each test's feed stream PSD results were first compared to confirm that their distributions were similar to allow for comparative statistics.

```
# package name: patchwork (side by side plots)
combined.plot_raw_psd <- plot.Feedraw_psd + plot.OSraw_psd + plot.USraw_psd & theme(legend.position = "bottom")
combined.plot_raw_psd + plot_layout(guides = "collect")
```



Method 2

Each test's feed stream PSD results were first compared to confirm that their distributions were similar to allow for comparative statistics.

difference in code starts here:

```

#combine the datasets:
PSD_raw_psd_allStreams <- rbind(long_feeddraw_psd,long_OSraw_psd,long_USraw_psd)

PSD_raw_psd_allStreams <- data.frame(PSD_raw_psd_allStreams,
                                     Df = rep(c("Feed (unmodeled)","OS (unmod.)","US (unmod.)" ),
                                              times=c(nrow(long_feeddraw_psd),nrow(long_OSraw_psd),nrow(long_USraw_psd)))

outplot_all_unmoddled <- ggplot(PSD_raw_psd_allStreams, aes(sieve, probability, colour = stream)) +
  geom_line() +
  geom_point() +
  ggtitle("Feed streams unmodeled solids frequency distribution.") +
  theme(plot.title = element_text(size=9)) +
  facet_wrap(~Df)

ggsave(here("05_fig_output","all_streams_preModelling.pdf"), outplot_all_unmoddled, width=10, height=8)

```

method 2 is perfect for this application:

- x and y same for all plots
- can combine with row bing...in this case no problem..with cbind will be a proble where different models(RR and GGS) have diffrenrows due to logs.

Method 3

try to combine 3 PSD with 3 cummulative PSDs

```

#combine the datasets for plotting side-by-side:
PSD_raw_psd_allStreams <- rbind(long_feeddraw_psd,long_OSraw_psd,long_USraw_psd)

#PSD_cum_raw_psd_allStreams <- cumsum(PSD_raw_psd_allStreams)

PSD_raw_psd_allStreams <- data.frame(PSD_raw_psd_allStreams,
                                     Df = rep(c("Feed (unmodeled)","OS (unmod.)","US (unmod.)" ),
                                              times=c(nrow(long_feeddraw_psd),nrow(long_OSraw_psd),nrow(long_USraw_psd)))

(outplot_all_unmoddled <- ggplot(PSD_raw_psd_allStreams, aes(sieve, cumsum(probability), colour = stream)) +
  geom_line(size = 1) +
  geom_point() +
  ggtitle("Unmodeled solids frequency distribution.") +
  theme(plot.title = element_text(size=10)) +
  facet_wrap(~Df))

```

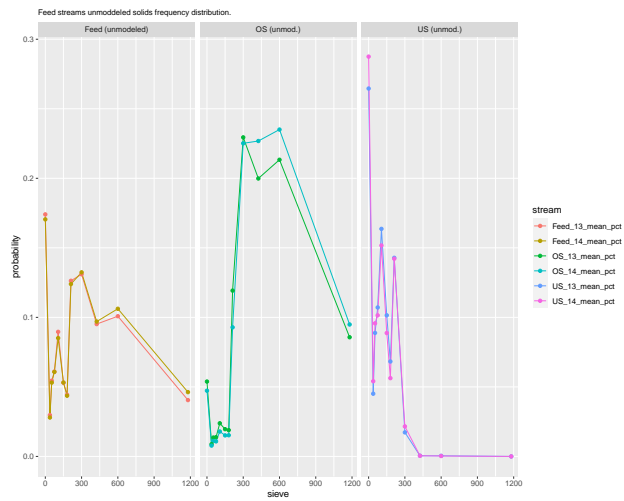
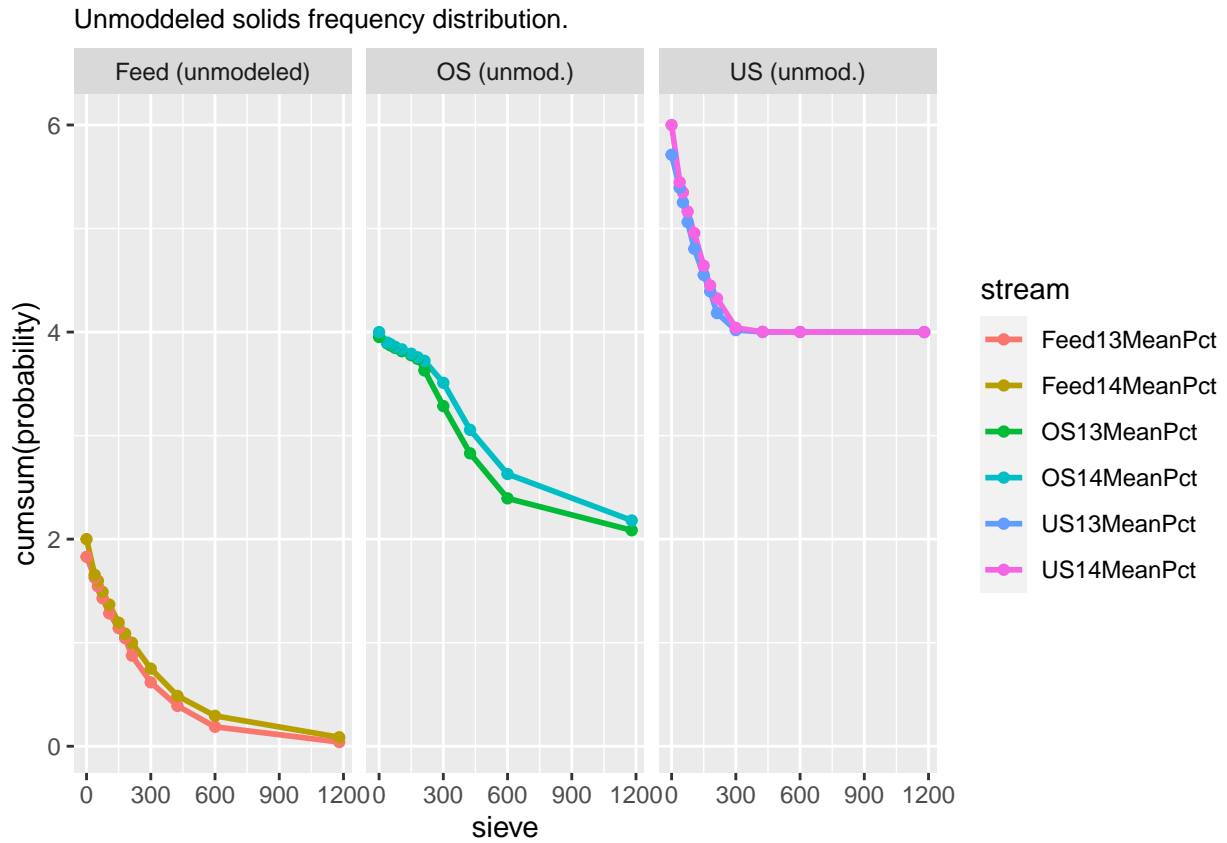


Figure 1: ...

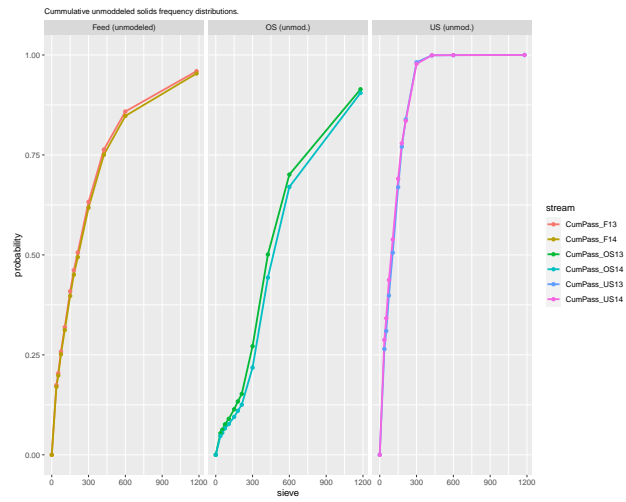


Figure 2: ...

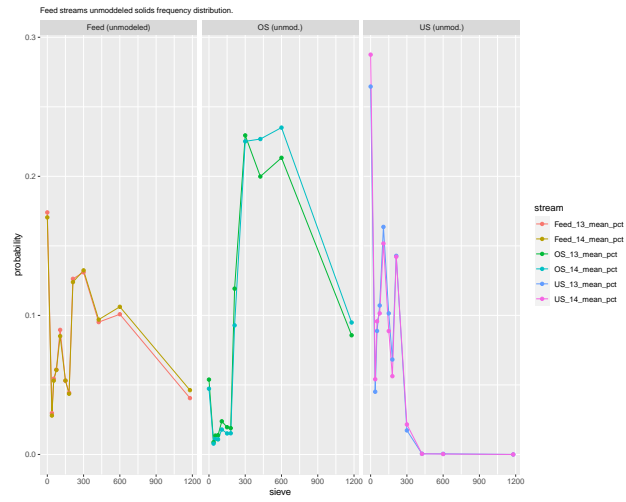


Figure 3: ...

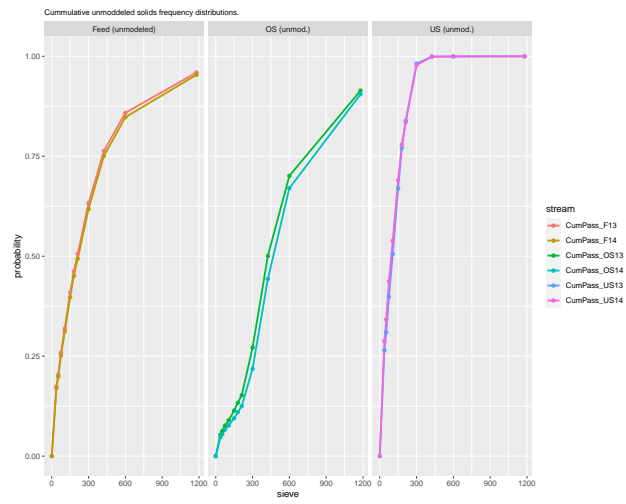


Figure 4: ...