To do this we define new ranges for the parameters:

```{r}

min\_val <- list()

max\_val <- list()

new\_ranges <- list()

for (i in 1:length(ranges)) {

par <- names(ranges)[[i]]

min\_val[[par]] <- max(min(new\_points[,par])-0.05\*diff(range(new\_points[,par])),

ranges[[par]][1])

max\_val[[par]] <- min(max(new\_points[,par])+0.05\*diff(range(new\_points[,par])),

ranges[[par]][2])

new\_ranges[[par]] <- c(min\_val[[par]], max\_val[[par]])

}

```

```{info, title="Remind me of why the new lower and upper bounds are defined as above"}

The list new\_ranges contains lower and upper bounds for each parameter. The upper bound for a given parameter is determined in the following way:

- Among all points in new\_points, the maximum value of the parameter is identified.

- $5\%$ of the original range of the parameter is added to the maximum value found in the previous point. This step enlarges the new range slightly, to make sure that we are including all non-implausible points.

- The minimum between the value found above and the upper bound in the original ranges list is selected: this ensure that we do not end up with a new upper bound which is larger than the original one.

A similar calculation was used to determine the new lower bounds of parameters.

```