Test for ILC report template

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equation 1

equation 2

equation 3

equation 4

equazione 5

equazione 6 repeatibility

equazione 7 reproducibility

DATA LOAD data <- read.csv(‘Height\_data.csv’) height <- data$Height

hist(height) #histogram

#POPULATION PARAMETER CALCULATIONS pop\_sd <- sd(height)\*sqrt((length(height)-1)/(length(height))) pop\_mean <- mean(height)

{r Figure 811, echo = FALSE, warning = FALSE, cache = FALSE, results = ‘asis’, message = FALSE, comment=FALSE, fig.width = 8, fig.height = 8, fig.cap = “**Figure 811.** Correspondence between and slope for sensor systems (SS) for 1 hour averaging time. Only sensor models with > 0.75 and 0.5 < < 1.2 are shown. Names of ‘living’ and ‘non-living’ sensors are indicated in black and blue color, respectively.”}

DB\_taylor <- DB

levels(DB$field\_\_\_lab) <- gsub("^FIELD$“,”Feld Test", levels(DBfield\_**lab) <- gsub("^LAB$","Laboratory Test", levels(DB$field**\_lab))

# select only FIELD TESTS tests

DB\_taylor <- DB\_taylor %>% filter(!field\_\_\_lab == “Laboratory Test”, sensor\_result\_unit %in% c(“µg/m3”, “ppb”, “ppm”, “#”, “mg/m3”))

# remove records with empty slope

DB\_taylor <- DB\_taylor[!(is.na(DB\_taylor$slope)), ]

# remove records with empty r2

DB\_taylor <- DB\_taylor[!(is.na(DB\_taylor$r2)), ]

DB\_taylorslope

for (i in 1:nrow(DB\_taylor)) { if (DB\_taylor$y[i] == "Sensor") { DB\_taylor$new\_slope[i] = 1/DB\_taylor$slope[i] } }

# filter sensors with R2 > 0.7 and 0.5 < slope < 1.5

DB\_taylor <- DB\_taylor %>% filter(r2 > 0.75 & new\_slope > 0.5 & new\_slope < 1.2)

DB\_taylor <- DB\_taylor %>% group\_by(model, open\_close, OEM\_system, living) %>% filter(time\_avg == “1 hour”) %>% summarise(mean\_r2 = mean(r2), mean\_slope = mean(new\_slope))

# rename “updated” with “y” (living)

levels(DB\_taylor$living) <- gsub("^updated","Y", levels(DB\_taylor$living))

DB\_taylor\_SS <- DB\_taylor %>% filter(OEM\_system == “SS”)

###### function to shif axis

shift\_axis\_x <- function(p, x=0){ g <- ggplotGrob(p) dummy <- data.frame(x=x) ax <- g[[“grobs”]][gname == “axis-l”][[1]] p + annotation\_custom(grid::grobTree(ax, vp = grid::viewport(x=1, width = sum(ax$height))), xmax=x, xmin=x) + geom\_vline(aes(xintercept=x), data = dummy) + theme(axis.text.y = element\_blank(), axis.ticks.y=element\_blank(), # panel.grid.major = element\_blank(), # panel.grid.minor = element\_blank(), # panel.background = element\_blank(), panel.border = element\_blank(), axis.line.x = element\_line(colour = “black”)) }

x <- c(0.5, 1, 1.5) y <- c(1, 0.75, 1) TRIANGLE <- data.frame(x,y)

plot <- ggplot(data = DB\_taylor\_SS, aes(x = mean\_slope, y = mean\_r2)) + theme\_bw() + # theme\_classic() + geom\_point(size = 3, aes(shape = open\_close, color = open\_close), show.legend = FALSE) + geom\_polygon(data = TRIANGLE, aes(x=x, y=y), fill = “skyblue2”, alpha=0.4) + scale\_shape\_manual(values=c(16, 1)) + geom\_text\_repel(aes(label=model,color = living), size = 4, show.legend = FALSE) + scale\_color\_manual(values=c(“black”, “blue”, “red”, “black”)) + # “living”, “no-living”, “open source”, “black box” # scale\_color\_manual(values=c(“blue”, “black”)) + xlab(“mean slope”) + xlim(c(0.5,1.5)) + ylab(expression(paste(“mean”, R^2),size=12)) + theme(strip.text = element\_text(size = 15, face=“bold”)) + theme(strip.text.y = element\_text(angle = 0)) + theme(axis.title.x = element\_text(colour=“black”, size=15), axis.text.x = element\_text(angle=0, vjust=0.5, hjust = 0.5, size=13, colour = “red”)) + theme(axis.title.y = element\_text(colour=“black”, size=15), axis.text.y = element\_text(angle=0, vjust=0.5, size=13, colour = “red”)) + # ggtitle(expression(paste(“Relation between mean”, R^2, " and mean slope for Sensor Systems (1 hour avg. time)“))) + theme(plot.title = element\_text(lineheight=.8, face=”bold", size = 15, hjust = 0.5))

plot <- shift\_axis\_x(plot, 1) plot