Calculating differences and storing new datafile

#Creating differences dataframe  
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library(markdown)  
library(tidyr)  
library(dplyr)

library(ggplot2)  
library(readr)  
library(gridExtra)

library(ggpubr)

library(colourpicker)  
library(forecast)

setwd("/home/thomasz/Desktop/toolik\_timeseries/toolik\_timeseries")  
  
#Reading in .csv's----  
#Hourly  
observed\_hour <- read.csv('observed\_hourly.csv', header = TRUE, skip = 0, sep = ",")  
modeldefault\_hour <- read.csv('default\_hourly.csv', header = TRUE, skip = 0, sep = ",")  
green\_hour <- read.csv('green\_hourly.csv', header = TRUE, skip = 0, sep = ",")  
evergreen\_hour <- read.csv('evergreen\_hourly.csv', header = TRUE, skip = 0, sep = ",")  
real\_hour <- read.csv('realistic\_hourly.csv', header = TRUE, skip = 0, sep = ",")  
  
#Calculating differences between default, green and evergreen ----  
modeldefault\_hour <- modeldefault\_hour %>%  
 mutate(diff\_gr\_t = green\_hour$t - modeldefault\_hour$t) %>%  
 mutate(diff\_gr\_glw = green\_hour$glw - modeldefault\_hour$glw) %>%  
 mutate(diff\_gr\_gsw = green\_hour$gsw - modeldefault\_hour$gsw) %>%  
 mutate(diff\_gr\_hfx = green\_hour$hfx - modeldefault\_hour$hfx) %>%  
 mutate(diff\_gr\_lh = green\_hour$lh - modeldefault\_hour$lh) %>%  
 mutate(diff\_gr\_grdflx = green\_hour$grdflx - modeldefault\_hour$grdflx) %>%  
 mutate(diff\_gr\_tsk = green\_hour$tsk - modeldefault\_hour$tsk) %>%  
 mutate(diff\_gr\_tslb.1. = green\_hour$tslb.1. - modeldefault\_hour$tslb.1.) %>%  
 mutate(diff\_gr\_rainc = green\_hour$rainc - modeldefault\_hour$rainc) %>%  
 mutate(diff\_gr\_rainnc = green\_hour$rainnc - modeldefault\_hour$rainnc) %>%  
 mutate(diff\_evgr\_t = evergreen\_hour$t - modeldefault\_hour$t) %>%  
 mutate(diff\_evgr\_glw = evergreen\_hour$glw - modeldefault\_hour$glw) %>%  
 mutate(diff\_evgr\_gsw = evergreen\_hour$gsw - modeldefault\_hour$gsw) %>%  
 mutate(diff\_evgr\_hfx = evergreen\_hour$hfx - modeldefault\_hour$hfx) %>%  
 mutate(diff\_evgr\_lh = evergreen\_hour$lh - modeldefault\_hour$lh) %>%  
 mutate(diff\_evgr\_grdflx = evergreen\_hour$grdflx - modeldefault\_hour$grdflx) %>%  
 mutate(diff\_evgr\_tsk = evergreen\_hour$tsk - modeldefault\_hour$tsk) %>%  
 mutate(diff\_evgr\_tslb.1. = evergreen\_hour$tslb.1. - modeldefault\_hour$tslb.1.) %>%  
 mutate(diff\_evgr\_rainc = evergreen\_hour$rainc - modeldefault\_hour$rainc) %>%  
 mutate(diff\_evgr\_rainnc = evergreen\_hour$rainnc - modeldefault\_hour$rainnc) %>%  
 mutate(diff\_real\_t = real\_hour$t - modeldefault\_hour$t) %>%  
 mutate(diff\_real\_glw = real\_hour$glw - modeldefault\_hour$glw) %>%  
 mutate(diff\_real\_gsw = real\_hour$gsw - modeldefault\_hour$gsw) %>%  
 mutate(diff\_real\_hfx = real\_hour$hfx - modeldefault\_hour$hfx) %>%  
 mutate(diff\_real\_lh = real\_hour$lh - modeldefault\_hour$lh) %>%  
 mutate(diff\_real\_grdflx = real\_hour$grdflx - modeldefault\_hour$grdflx) %>%  
 mutate(diff\_real\_tsk = real\_hour$tsk - modeldefault\_hour$tsk) %>%  
 mutate(diff\_real\_tslb.1. = real\_hour$tslb.1. - modeldefault\_hour$tslb.1.) %>%  
 mutate(diff\_real\_rainc = real\_hour$rainc - modeldefault\_hour$rainc) %>%  
 mutate(diff\_real\_rainnc = real\_hour$rainnc - modeldefault\_hour$rainnc)   
  
  
#Combining variables into dataframe----  
all\_differences\_hourly <- dplyr::select(modeldefault\_hour, ts\_hour, diff\_gr\_t, diff\_gr\_glw, diff\_gr\_gsw, diff\_gr\_hfx, diff\_gr\_lh,  
 diff\_gr\_grdflx, diff\_gr\_tsk, diff\_gr\_tslb.1., diff\_gr\_rainc, diff\_gr\_rainnc,   
 diff\_evgr\_t, diff\_evgr\_glw, diff\_evgr\_gsw, diff\_evgr\_hfx, diff\_evgr\_lh,  
 diff\_evgr\_grdflx, diff\_evgr\_tsk, diff\_evgr\_tslb.1., diff\_evgr\_rainc,   
 diff\_evgr\_rainnc, diff\_real\_t, diff\_real\_glw, diff\_real\_gsw, diff\_real\_hfx,   
 diff\_real\_lh, diff\_real\_grdflx, diff\_real\_tsk, diff\_real\_tslb.1., diff\_real\_rainc,   
 diff\_real\_rainnc)  
  
#Writing New csv----  
write.csv(all\_differences\_hourly, file = "1-differences\_hourly.csv")