Supplementary Code

# imputes non-wear epochs
# requires mice package
# parameters:
#   subject_data: a data frame in long format on epoch scale
#     should contain:
#     - 0/1 indicator variable for non-wear that equals 1 for nonwear epochs, 0 for wear epochs
#     - variables to use in imputation model. non-numeric variables should be factors or mice chokes
#     - a variable containing an activity level with non-wear data to impute. non-wear epochs need not
#     be set to NA
#   non_wear_var: name of 0/1 indicator variable for non-wear
#   model_vars: array of names of variables to include in the imputation model
#   impute_method: impute method for mice to use
#   imputed_var: name of activity variable to impute
#   n_impute: number of imputed data sets to create
#   n_iter: number of iterations to use for each imputed data set

miceImputeEpoch <- function(subject_data, non_wear_var, model_vars, imputed_var, impute_method = "norm", n_impute = 5, n_iter = 5) {
  library(mice)

  #set counts for nonwear time to NA
  subject_data[[imputed_var]][subject_data[[non_wear_var]] == 1] <- NA

  #set up mice parameters
  mice_setup <- mice(subject_data, maxit = 0)

  #set all specified variables for inclusion in imputation models
  mice_pred <- mice_setup$predictorMatrix
  mice_pred[rownames(mice_pred) == imputed_var, colnames(mice_pred) %in% model_vars] <- 1

  #set imputation method
  mice_method <- mice_setup$method
  mice_method[mice_method !=""] <- impute_method
#impute data
imputed_data <- mice(subject_data,
     m = n_impute,
     maxit = n_iter,
     pred = mice_pred,
     method = mice_method)

return(imputed_data)
}