MMS Project Pieces: Data Exploration and Visualization

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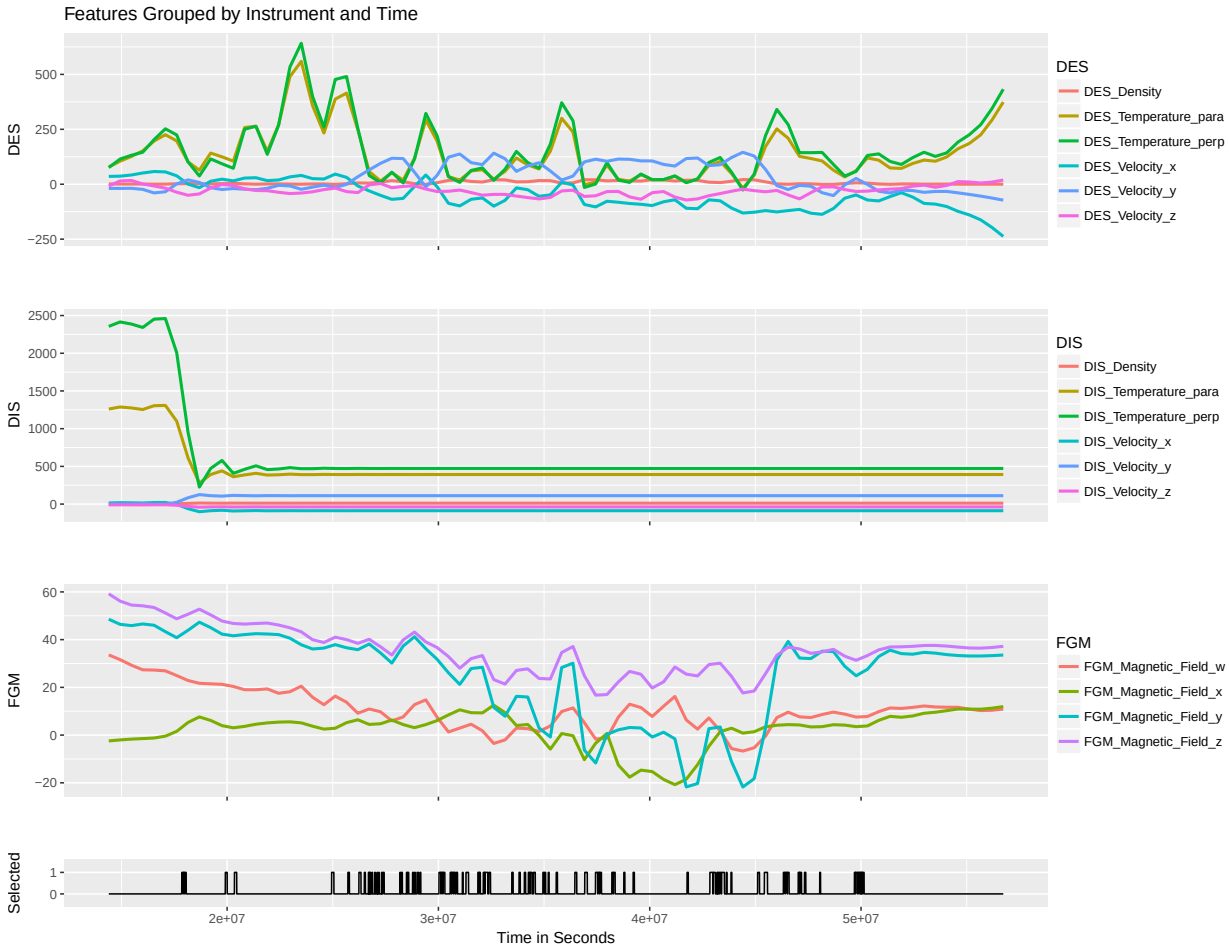
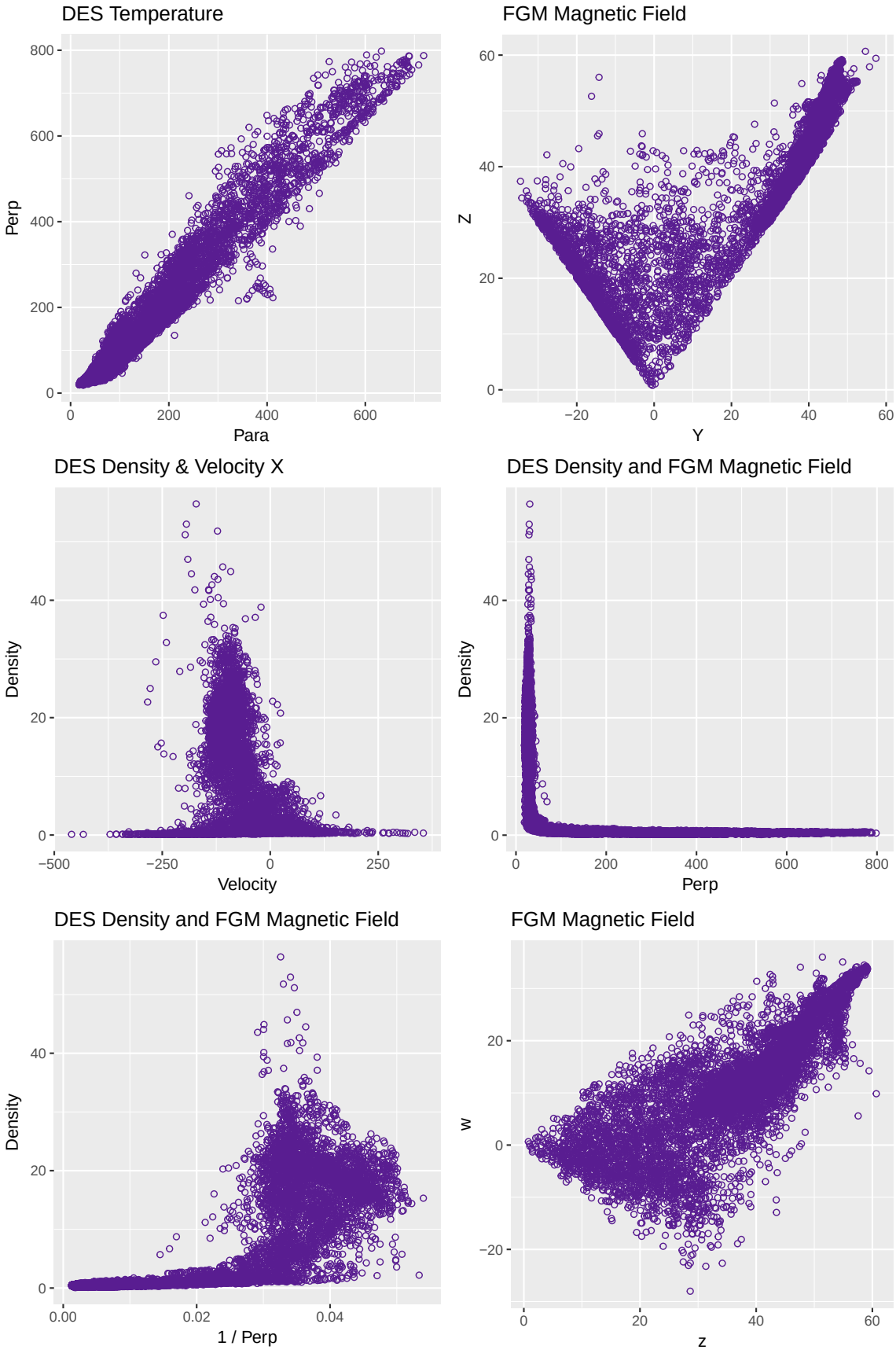
April 4, 2018

Data Exploration and Visualization

Here is a visualization of dataset 1.




DES Temperature
Perp
Para
FGM Magnetic Field
Z
Y
DES Density & Velocity X
Density
Velocity
DES Density and FGM Magnetic Field
Density
Perp
DES Density and FGM Magnetic Field
Density
1 / Perp
FGM Magnetic Field
w
z

Time Series Exploration

```
## Basic Logistic Lasso Total Error
## -------------------------------------

##
## Attaching package: 'dplyr'

## The following object is masked from 'package:MASS':
##
##     select

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union

## Total SITL points:  1234
## Found SITL points:  569
## Missed SITL points:  665
## Classification error:  0.1430569
## ERROR:  5390.784

## Basic SVM Error

## Total Accuracy via CV:  88.94148

## Train data
## -------------------------------------

## Total SITL points:  932
## Found SITL points:  584
## Missed SITL points:  348
## Classification error:  0.09982788
## ERROR:  3518.688

## Test data
## -------------------------------------

## Total SITL points:  302
## Found SITL points:  192
## Missed SITL points:  110
## Classification error:  0.09462366
## ERROR:  4044.728

## Total
## -------------------------------------

## Total SITL points:  1234
## Found SITL points:  775
## Missed SITL points:  459
## Classification error:  0.09874153
## ERROR:  3616.897

## Time Series Logistic Lasso Total Error
## -------------------------------------

## Total SITL points:  1234
```

```
## Found SITL points:  613
## Missed SITL points:  621
## Classification error:  0.1335915
## ERROR:  5005.964

## Time Series SVM Error

## Total Accuracy via CV:  91.55192

## Train data
## ------------------------------------

## Total SITL points:  932
## Found SITL points:  692
## Missed SITL points:  240
## Classification error:  0.06884682
## ERROR:  2115.274

## Test data
## ------------------------------------

## Total SITL points:  302
## Found SITL points:  210
## Missed SITL points:  92
## Classification error:  0.07913978
## ERROR:  2888.676

## Total
## ------------------------------------

## Total SITL points:  1234
## Found SITL points:  903
## Missed SITL points:  331
## Classification error:  0.07120577
## ERROR:  2297.419
```