LAB 2 REPORT

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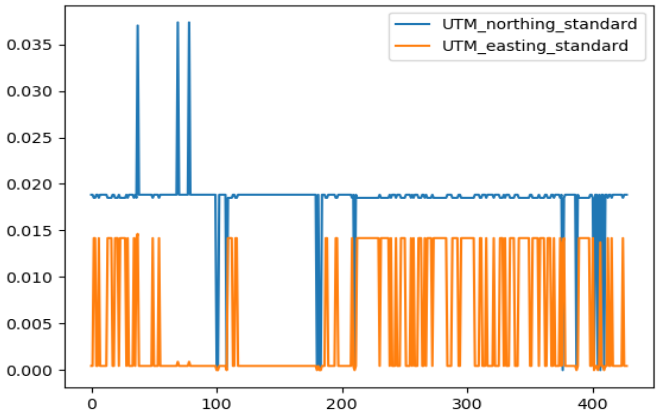
Real time kinematic positioning(RTK), this experimentation on GPS module is done using 2 GPS's which are calibrated as base and rover stations this method is implemented to achieve accurate location which decreases the amount of variation in position data by giving a standard point in relation with the base module.
This data sends a fix value to the rover module to correct the position error. The Fig 1 is a graph between of utm values for stationary data in open environment. And fig 2 is of utm values for stationary data in noisy environment.



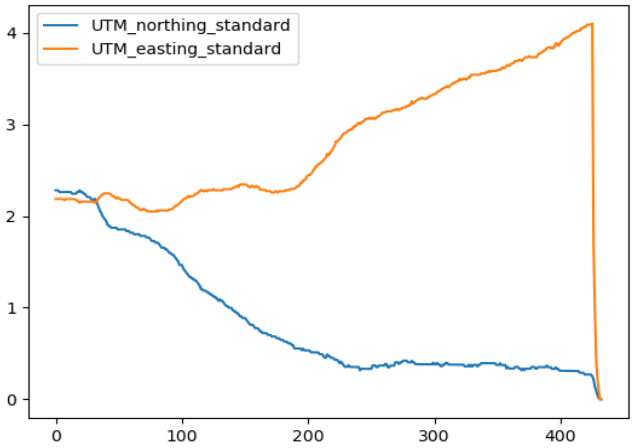


Figure 1

In the above data we can see the range of error is reduced to centimeters in comparison with the LAb1 error which is in meters. As I have mentioned earlier the date that is being transmitted by the base is acting as a corrective measure to the rover signal received from satellite with a certain time delay.

But in noisy environment the error remains in meters as it was in lab 1 stationary data, as shown in Fig2. This is because of the possible error that the rover is unable to detect the base signal among the multiple reflected signals.

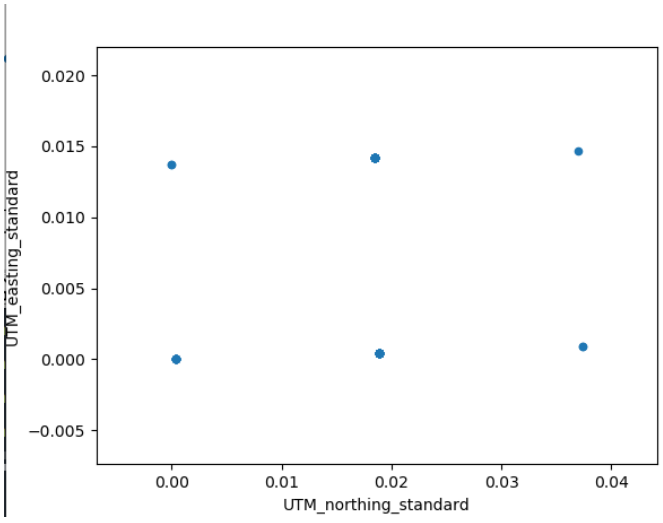


Figure 4

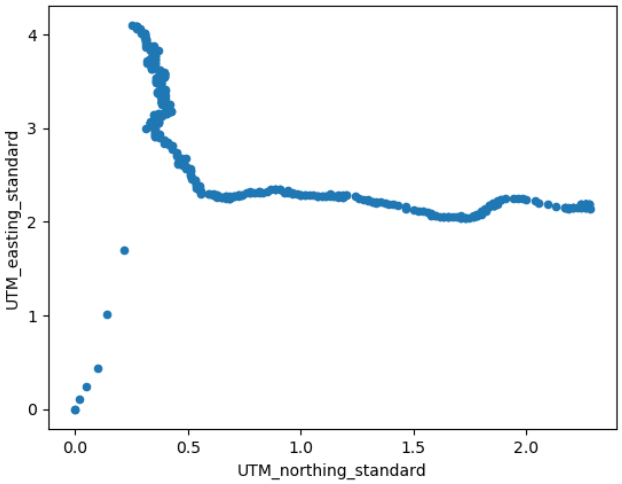


Figure 3

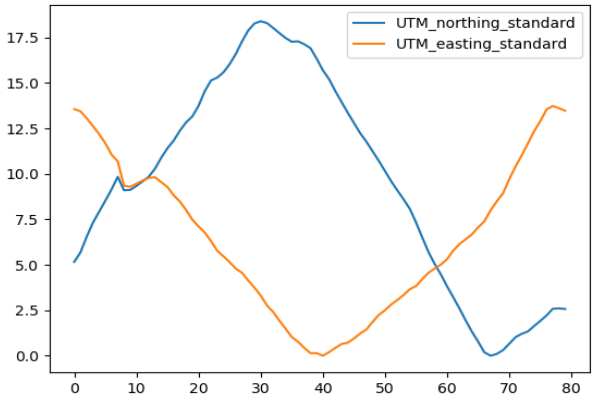


Figure 5

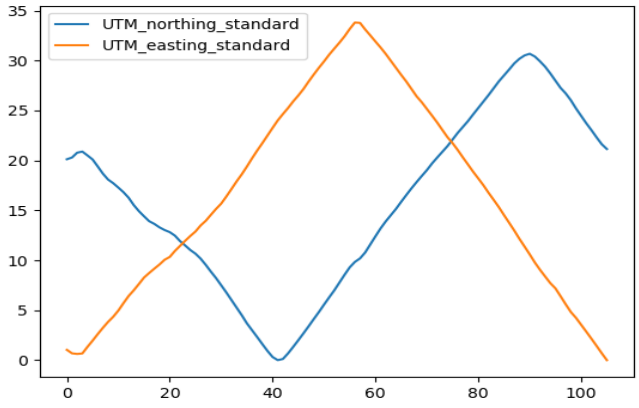


Figure 6

Figure 5 is the umt graph of walking data in open space and figure 6 is the utm graph of walking data in noisy environment.

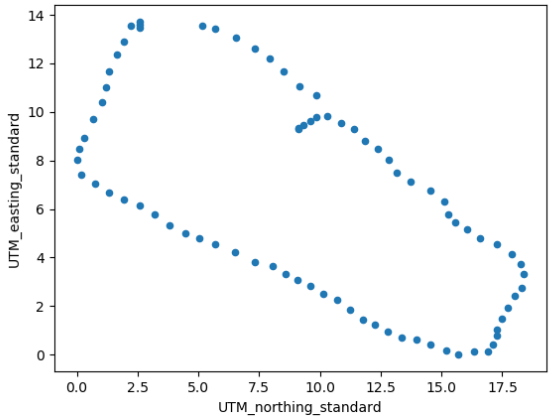


Figure 7

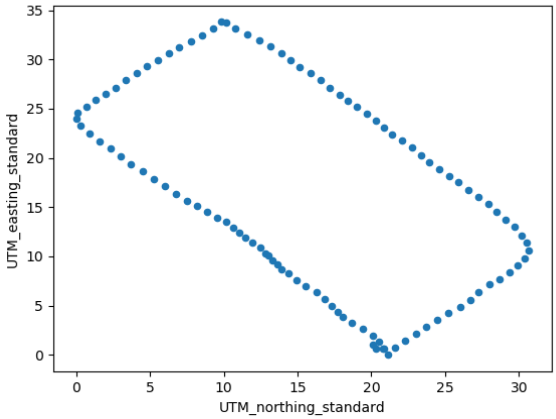


Figure 8

Figure 7 is the of walking data in noisy environment and figure 8 is the walking data in open environment.

Walking data over noisy and open environments remains to be unscathed or have minimal error because of the predicted value method implemented in GPS using kalman filter.