**Outliers can be detected using visualization, implementing mathematical formulas on the dataset, or using the statistical approach, we used Scatter plot and Mahalanobis Distance using python**

**Scatter plot for PM2.5 pollutant**



Figure 1: scatter plot for pm2.5

**Scatter plot for PM10**



Figure 2: scatter plot for PM10

**Scatter plot for NO2 pollutant**



Figure 3: scatter plot for NO2

**Scatter plot for O3 pollutant**



Figure 4: scatter plot for O3

**Mahalanobis Distance for PM2.5**



Figure 5: Mahalanobis Distance forPM2.5

Figure 5 shows the Mahalanobis Distance forPM2.5, the points stay outside the ellipse detected as outliers, this ellipse represents the area that wraps non-outlier values according to Mahalanobis Distance.

**Mahalanobis Distance for PM10**



Figure 6: Mahalanobis Distance forPM10

Figure 6 shows the Mahalanobis Distance forPM10, the points stay outside the ellipse detected as outliers, this ellipse represents the area that wraps non-outlier values according to Mahalanobis Distance.

**Mahalanobis Distance for NO2**



Figure 7: Mahalanobis Distance forNO2

Figure 7 shows the Mahalanobis Distance forNO2, the points stay outside the ellipse detected as outliers, this ellipse represents the area that wraps non-outlier values according to Mahalanobis Distance.

**Mahalanobis Distance for O3**



Figure 8: Mahalanobis Distance forO3

Figure 8 shows the Mahalanobis Distance forO3, the points stay outside the ellipse detected as outliers, this ellipse represents the area that wraps non-outlier values according to Mahalanobis Distance.