**Taipei PM2.5 Example**

1. Set CRS(Coordinate Reference System)

Select WGS84(EPSG:4326) in “Coordinate Reference System Selector”

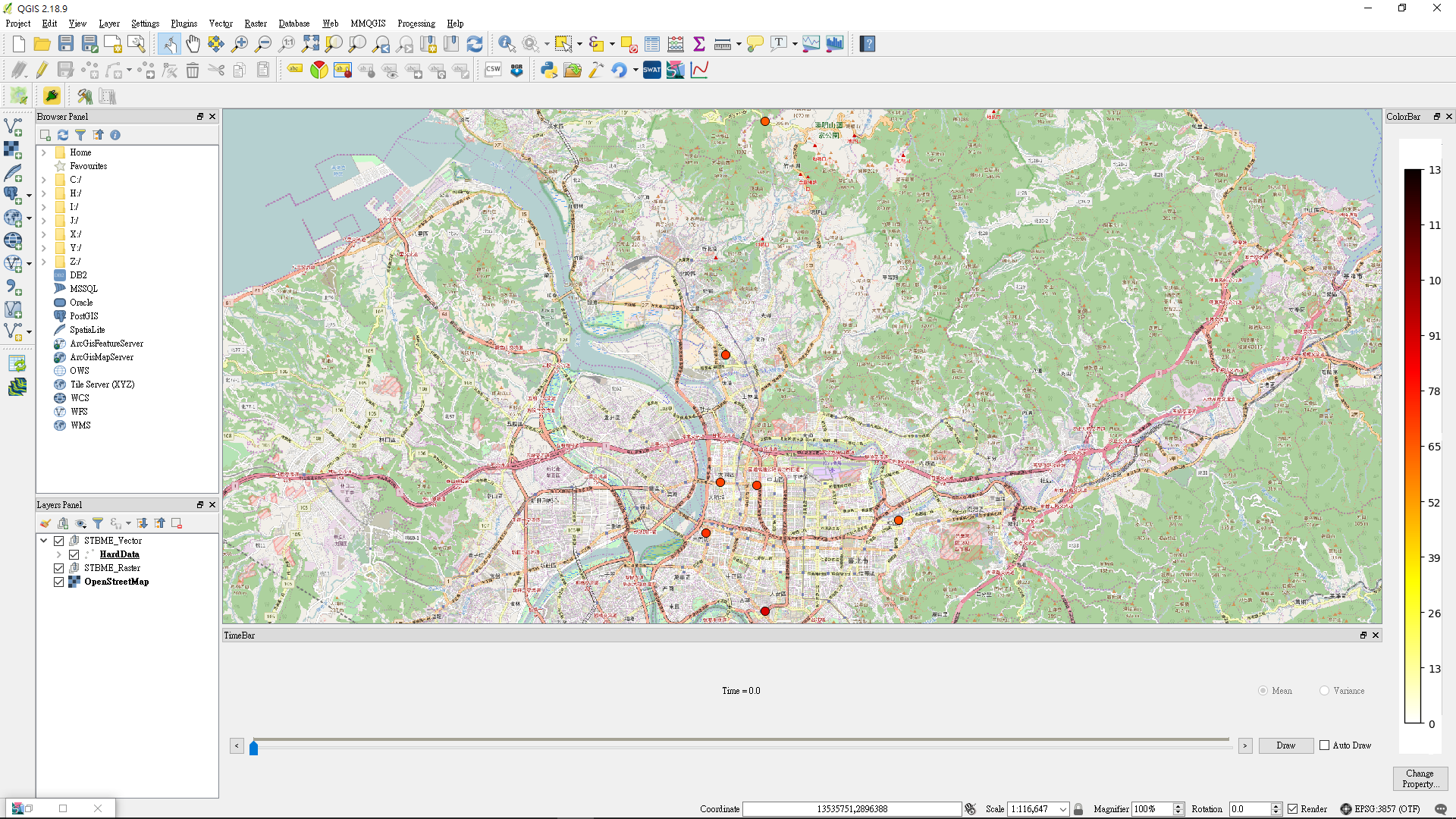
1. Specify data

Specify Hard data and Soft data in “Specify Data” window

1. Hard data

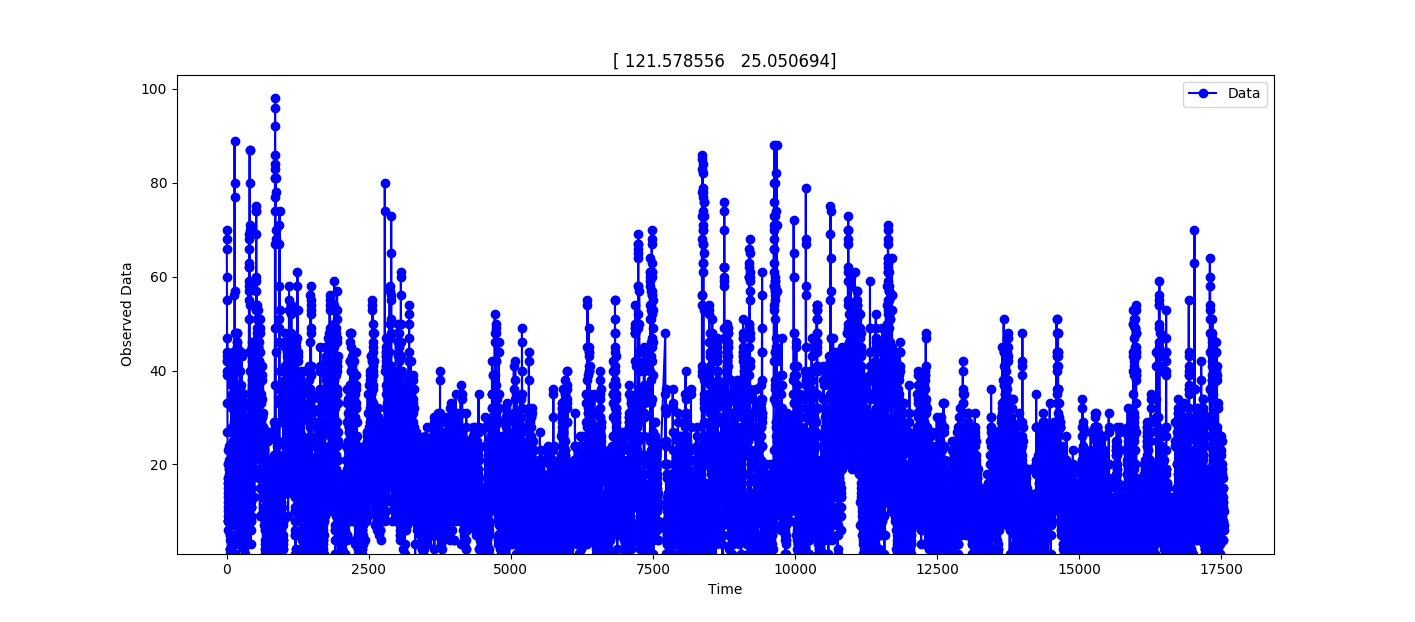
Select “PM2.5\_105\_taipei.csv” from downloaded example file under “/data”

After import hard data and soft data. BMEobj will be created,soft data and hard data will be load in QGIS.



Time View of hard data

Figure 2.2



Hard data (circle) and is showed. From figure2.1, color bar and time bar of data are showed on the left and below of figure.

1. Compute Trend and Residual From Data

User can choose “No Detrending”, “Kernel Smoothing” or “STmean” in this step. In this example, we will use “STMean”.

1. Covariance Analysis
   1. Empirical Covariance Estimation

For this case, we will set:

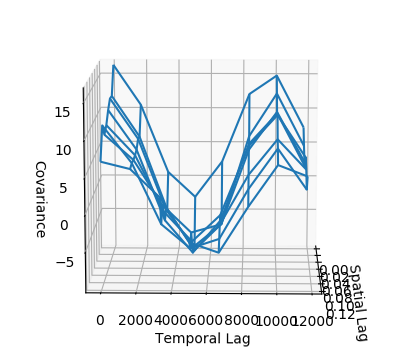
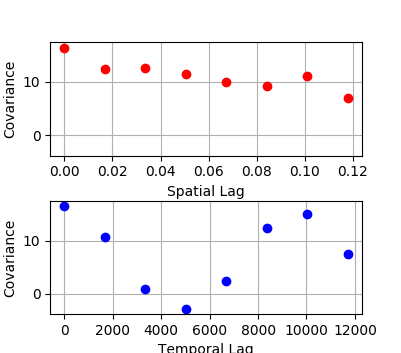
Spatial Distance Limit: 0.1179 Temporal Distance Limit: 11700.0

Number of Spatial Lags:8 Number of Temporal Lags:8

Spatial Lag Tolerance:0.01684 Spatial Temporal Tolerance: 1671.0

And press “Plot Empirical Covariance”.

Figure 4.1 2D and 3D covariance plot



And press “Plot Empirical Covariance”.

* 1. Covariance Model Fitting

In this case, we will use “Exponential” to fit covariance. After fitting covariance, 2D and 3D Fit covariance will be plotted.

Nest Number = 2

Fit Covariance Model

C1 =1.164, S1 = 0.05624, T1 =3326

C2 = 0.1365, S2 = 0.03682, T2 = 1861

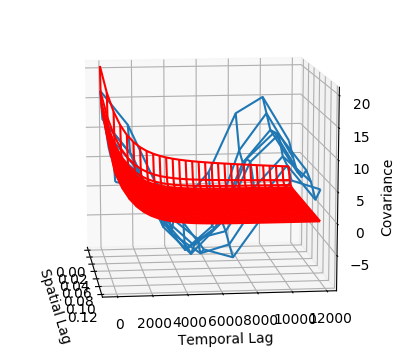
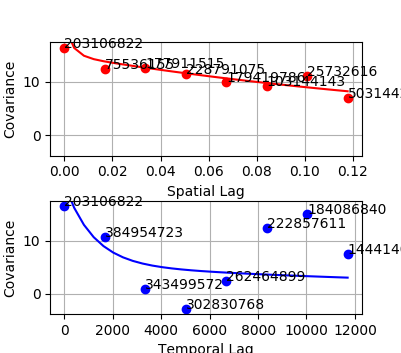


Figure 4.2 2D and 3D Fit covariance plot

1. Prediction

Specify location: For this case, we use “Grid Input”, which STARBME will generate grid coordinate for predict. Press “Predict” for predict the coordinate that generate by “Grid Input”, we will set coordinate boundary by select “ Set By Data Boundary”

For Grid Input,

Xn = 80

Yn = 80

Tmin = 0, Tmax = 100, Tn = 101

For Predict,

Order = ZeroMean

Spatial Range = 0.05624

Temporal Range = 3326.0

Spatial/Temporal Ratio = 1.691e-05

Nhmax = 5, nsmax = 0

1. Output result

Specify Task for result: Add Result to QGIS(Raster).