

TMIN

INFO

Umbria monthly min temperatures, 1980 to 1999
spatial reference EPSG:23633 - WGS84 UTM33 N - coordinates in m
time in years, resolution = 1/12 yr, period = 1 yr
data from Regione Umbria - Servizio Idrografico
url <https://servizioidrografico.regione.umbria.it>
url <https://annali.regione.umbria.it>

Timescape description

2521 Source events
192000 Target events
Null target events count is 53079
Model parameters:
Algorithm: KRIG, Neighborhood: all
Metric: EUCLID
Time to space conversion factor C=10000.0
Causal cone is periodic with K=0.2, KPERIOD 1.0
tip angle=0.39 rad, Omega=0.12 srad
envelope coverage is 2% of half-plane
T from 1985.0 to 2005.0 in 240 sheets: Tk, k=0...239
X from 250000.0 to 350000.0 in 25 rows: Xi, i=0...24
Y from 4697000.0 to 4823000.0 in 32 cells: Yj, j=0...31
Target events voxel size (each):
dT=0.08 (time units) or 833.33 (length units)
dX=4000.0, dY=3937.5, Area=15750000.0
Volume=13124999999.99 (length^3 units)

SOURCE

2521 source events found within
1980.042 < T < 1999.958
256800.0 < X < 330506.0
4711503.0 < Y < 4821089.0
-20.6 < VAL < 17.3
Metric:EUCLID
c = 10000.0, k = 0.2
The causal cone is periodic with k period = 1.0

Trend of VAL vs T:

OLS Regression Results

```
=====
Dep. Variable:          y      R-squared:          0.000
Model:                  OLS    Adj. R-squared:      -0.000
Method:                  Least Squares    F-statistic:      0.2697
Date:                    Fri, 20 Mar 2020    Prob (F-statistic):    0.604
Time:                    20:24:45    Log-Likelihood:      -8340.1
No. Observations:        2521    AIC:                  1.668e+04
Df Residuals:            2519    BIC:                  1.670e+04
Df Model:                1
Covariance Type:         nonrobust
=====
               coef      std err          t      P>|t|      [0.025      0.975]
-----
const          26.1708      45.586       0.574      0.566     -63.220     115.561
x1             -0.0119       0.023     -0.519      0.604     -0.057      0.033
=====
Omnibus:              338.319    Durbin-Watson:          0.430
Prob(Omnibus):         0.000    Jarque-Bera (JB):        85.321
Skew:                  0.030    Prob(JB):                2.97e-19
Kurtosis:              2.101    Cond. No.:               6.90e+05
=====
```

Trend of VAL vs X:

OLS Regression Results

```

=====
Dep. Variable:          y      R-squared:          0.004
Model:                  OLS    Adj. R-squared:       0.004
Method:                  Least Squares  F-statistic:       9.862
Date:                    Fri, 20 Mar 2020  Prob (F-statistic): 0.00171
Time:                    20:24:45  Log-Likelihood:    -8335.3
No. Observations:       2521    AIC:              1.667e+04
Df Residuals:           2519    BIC:              1.669e+04
Df Model:                1
Covariance Type:        nonrobust
=====

```

```

=====
              coef      std err          t      P>|t|      [0.025      0.975]
-----
const          8.5201        1.923        4.430      0.000         4.749        12.291
x1          -2.078e-05      6.62e-06       -3.140      0.002        -3.38e-05       -7.81e-06
=====
Omnibus:                 344.518    Durbin-Watson:           0.432
Prob(Omnibus):            0.000    Jarque-Bera (JB):         85.861
Skew:                     0.021    Prob(JB):                 2.27e-19
Kurtosis:                 2.097    Cond. No.:                4.25e+06
=====

```

Trend of VAL vs Y:

OLS Regression Results

```

=====
Dep. Variable:          y      R-squared:          0.000
Model:                  OLS    Adj. R-squared:       -0.000
Method:                  Least Squares  F-statistic:       0.6289
Date:                    Fri, 20 Mar 2020  Prob (F-statistic): 0.428
Time:                    20:24:45  Log-Likelihood:    -8339.9
No. Observations:       2521    AIC:              1.668e+04
Df Residuals:           2519    BIC:              1.670e+04
Df Model:                1
Covariance Type:        nonrobust
=====

```

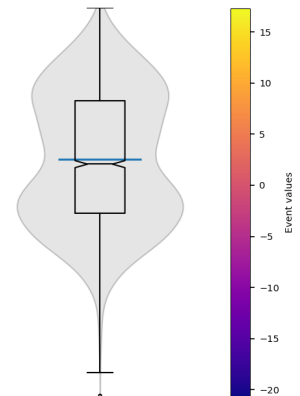
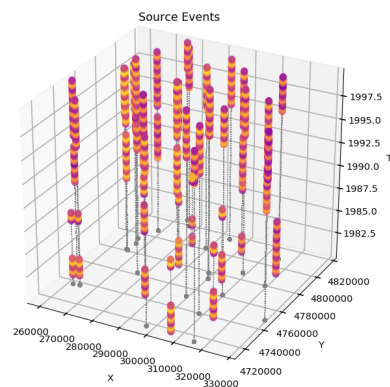
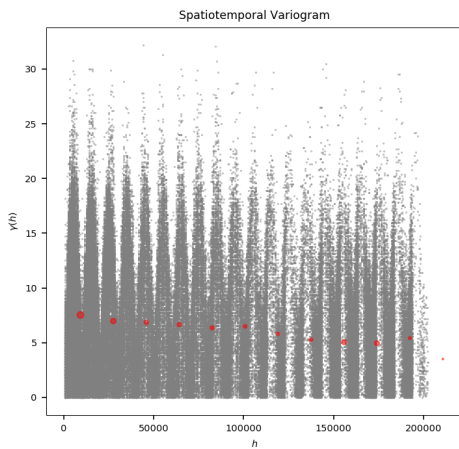
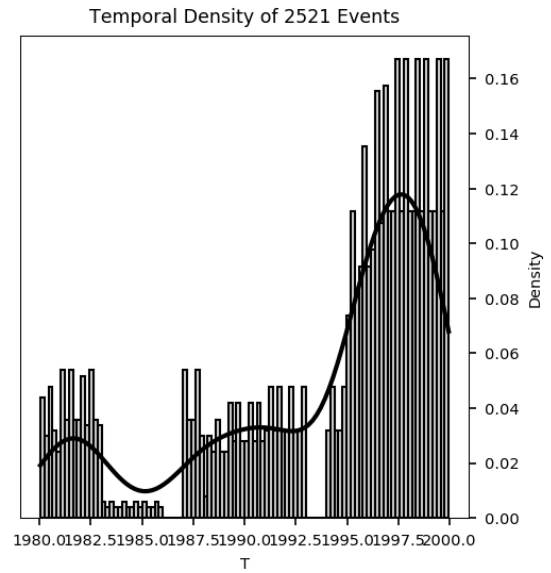
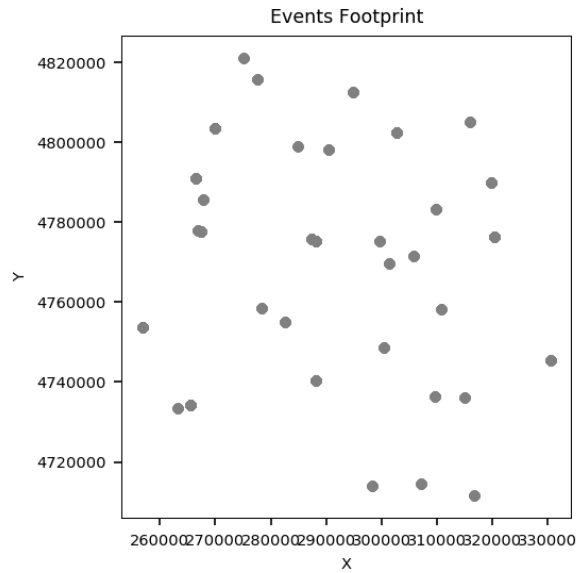
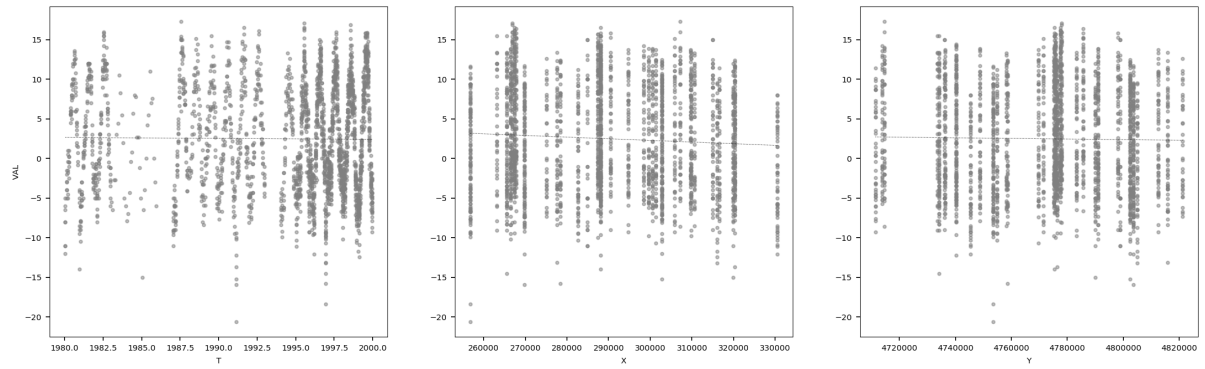
```

=====
              coef      std err          t      P>|t|      [0.025      0.975]
-----
const          20.8298        23.121         0.901      0.368        -24.507        66.167
x1          -3.843e-06      4.85e-06       -0.793      0.428        -1.33e-05        5.66e-06
=====
Omnibus:                 344.593    Durbin-Watson:           0.430
Prob(Omnibus):            0.000    Jarque-Bera (JB):         86.029
Skew:                     0.030    Prob(JB):                 2.09e-19
Kurtosis:                 2.097    Cond. No.:                8.37e+08
=====

```

Warnings:

- [1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
- [2] The condition number is large, 8.37e+08. This might indicate that there are strong multicollinearity or other numerical problems.



Variogram

h, gamma

```
9167.549915246918,7.524077833793447
27502.649745740753,6.970968653920883
45837.74957623459,6.8422511670797235
64172.84940672843,6.643974196660081
82507.94923722226,6.351607896697345
100843.0490677161,6.486250000000021
119178.14889820994,5.800109745390673
137513.24872870377,5.260540357415085
155848.34855919762,5.039860139860171
174183.44838969145,4.946550462664089
192518.54822018527,5.40917056074768
210853.64805067913,3.5043478260869567
```