

# $\delta^{15}\text{N}$

## INFO

Fungi (*Tuber aestivum* Vittad.)  $\delta^{15}\text{N}$   
coordinates in m from a conventional zero  
time in days from a conventional zero  
data from CNR-IRET - Institute of Research on Terrestrial Ecosystems  
url <http://www.spettrometriadi massa.it/Congressi/1IRMSDay/BOOK of ABSTRACTS.pdf>

### Timescape description

62 Source events  
1048576 Target events  
Null target events count is 474384  
Model parameters:  
Algorithm: KRIG, Neighborhood: all  
Metric: EUCLID  
Time to space conversion factor C=1.5  
Causal cone is straight with K=1.0  
tip angle=1.57 rad, Omega=1.84 sr  
cone coverage is 29% of half-plane  
T from 0.0 to 80.0 in 64 sheets: Tk, k=0...63  
X from 0.0 to 144.01 in 128 rows: Xi, i=0...127  
Y from 0.0 to 122.59 in 128 cells: Yj, j=0...127  
Target events voxel size (each):  
dT=1.25 (time units) or 1.875 (length units)  
dX=1.13, dY=0.96, Area=1.08  
Volume=2.02 (length<sup>3</sup> units)

## SOURCE

62 source events found within  
0.0 < T < 55.0  
0.0 < X < 144.01  
0.0 < Y < 122.59  
3.82 < VAL < 9.81

Metric:EUCLID

c = 1.5, k = 1.0

The causal cone is straight

### Trend of VAL vs T:

### OLS Regression Results

```
=====
Dep. Variable:          y      R-squared:          0.020
Model:                  OLS    Adj. R-squared:      0.004
Method:                  Least Squares    F-statistic:    1.243
Date:                    Fri, 20 Mar 2020    Prob (F-statistic): 0.269
Time:                    20:24:07    Log-Likelihood:   -89.896
No. Observations:        62    AIC:              183.8
Df Residuals:            60    BIC:              188.0
Df Model:                 1
Covariance Type:         nonrobust
=====
```

	coef	std err	t	P> t	[0.025	0.975]
const	5.8948	0.289	20.413	0.000	5.317	6.472
x1	0.0099	0.009	1.115	0.269	-0.008	0.028

```
=====
Omnibus:                 21.264    Durbin-Watson:      1.017
Prob(Omnibus):           0.000    Jarque-Bera (JB):    32.139
Skew:                    1.254    Prob(JB):            1.05e-07
Kurtosis:                 5.481    Cond. No.            70.3
=====
```

Trend of VAL vs X:

# OLS Regression Results

```

=====
Dep. Variable:          y      R-squared:          0.351
Model:                  OLS    Adj. R-squared:       0.340
Method:                 Least Squares  F-statistic:       32.43
Date:                   Fri, 20 Mar 2020  Prob (F-statistic): 3.95e-07
Time:                   20:24:07  Log-Likelihood:    -77.135
No. Observations:      62      AIC:              158.3
Df Residuals:          60      BIC:              162.5
Df Model:               1
Covariance Type:       nonrobust
=====

```

	coef	std err	t	P> t	[0.025	0.975]
const	5.6438	0.144	39.293	0.000	5.356	5.931
x1	0.0124	0.002	5.695	0.000	0.008	0.017

```

=====
Omnibus:                 3.567    Durbin-Watson:          1.483
Prob(Omnibus):           0.168    Jarque-Bera (JB):       2.683
Skew:                    0.469    Prob(JB):               0.261
Kurtosis:                3.399    Cond. No.:              87.1
=====

```

Trend of VAL vs Y:

# OLS Regression Results

```

=====
Dep. Variable:          y      R-squared:          0.115
Model:                  OLS    Adj. R-squared:       0.100
Method:                 Least Squares  F-statistic:         7.815
Date:                   Fri, 20 Mar 2020  Prob (F-statistic): 0.00695
Time:                   20:24:07  Log-Likelihood:    -86.736
No. Observations:      62      AIC:              177.5
Df Residuals:          60      BIC:              181.7
Df Model:               1
Covariance Type:       nonrobust
=====

```

	coef	std err	t	P> t	[0.025	0.975]
const	6.7185	0.230	29.169	0.000	6.258	7.179
x1	-0.0097	0.003	-2.795	0.007	-0.017	-0.003

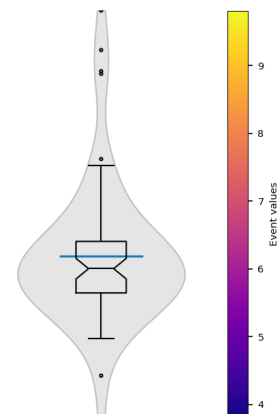
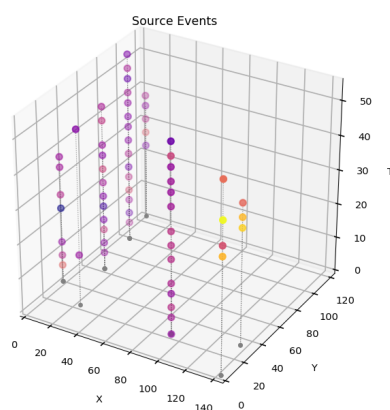
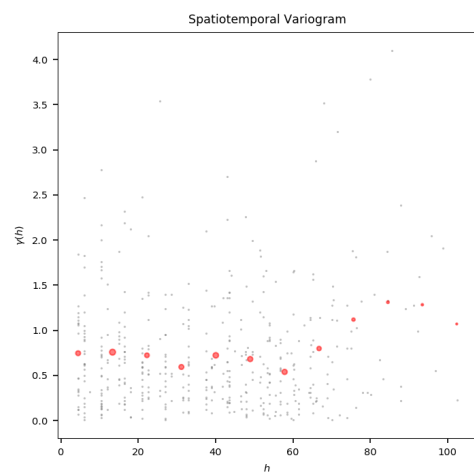
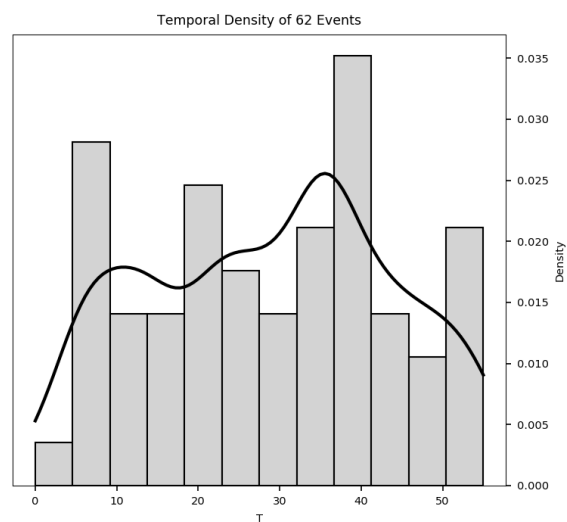
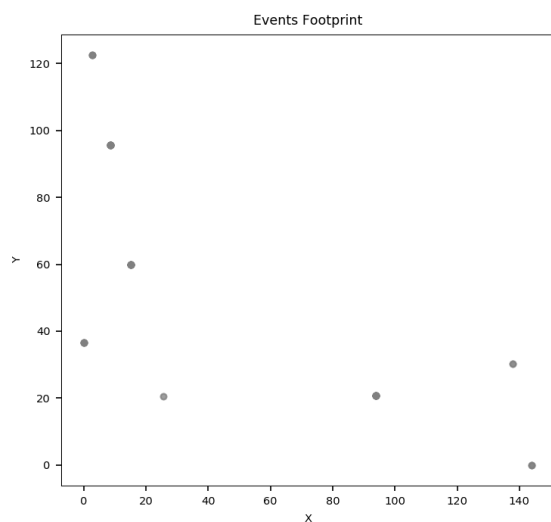
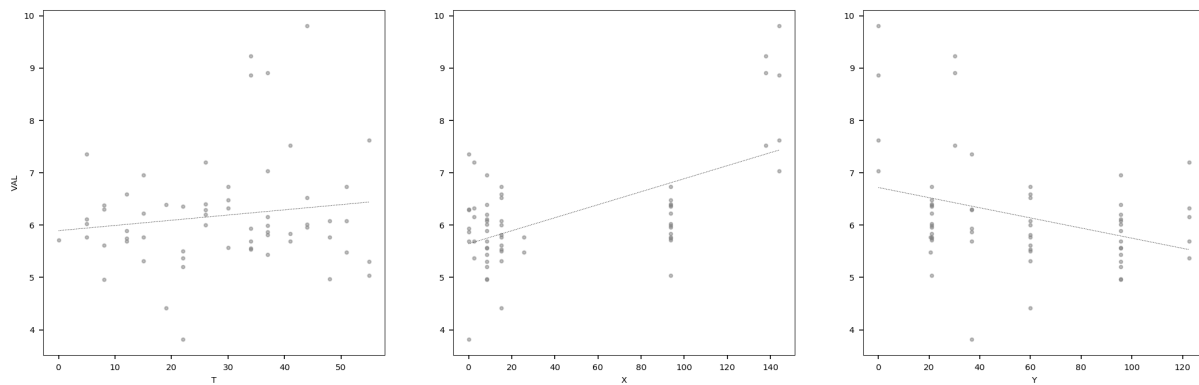
```

=====
Omnibus:                 15.205    Durbin-Watson:          1.087
Prob(Omnibus):           0.000    Jarque-Bera (JB):       19.926
Skew:                    0.957    Prob(JB):               4.71e-05
Kurtosis:                5.012    Cond. No.:              121.
=====

```

## Warnings:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.



## Variogram

h,gamma

```
4.450320479023861,0.7456521739130433
13.350961437071582,0.7571830985915494
22.251602395119306,0.7226190476190476
31.152243353167027,0.5931914893617022
40.05288431121475,0.7223333333333334
48.95352526926247,0.6809615384615385
57.854166227310195,0.5384905660377358
66.75480718535792,0.7977777777777778
75.65544814340564,1.1183333333333332
84.55608910145337,1.3110000000000002
93.45673005950108,1.2833333333333334
102.3573710175488,1.0699999999999998
```