

HOW TO USE

TINTAGEL

version 3.0 by A.GASPANI (April, 1995)

Search for the extremum of a noisy sampled function by artificial neural networks

Input File: RZ CAS

Input file must be an ASCII file with the following format:

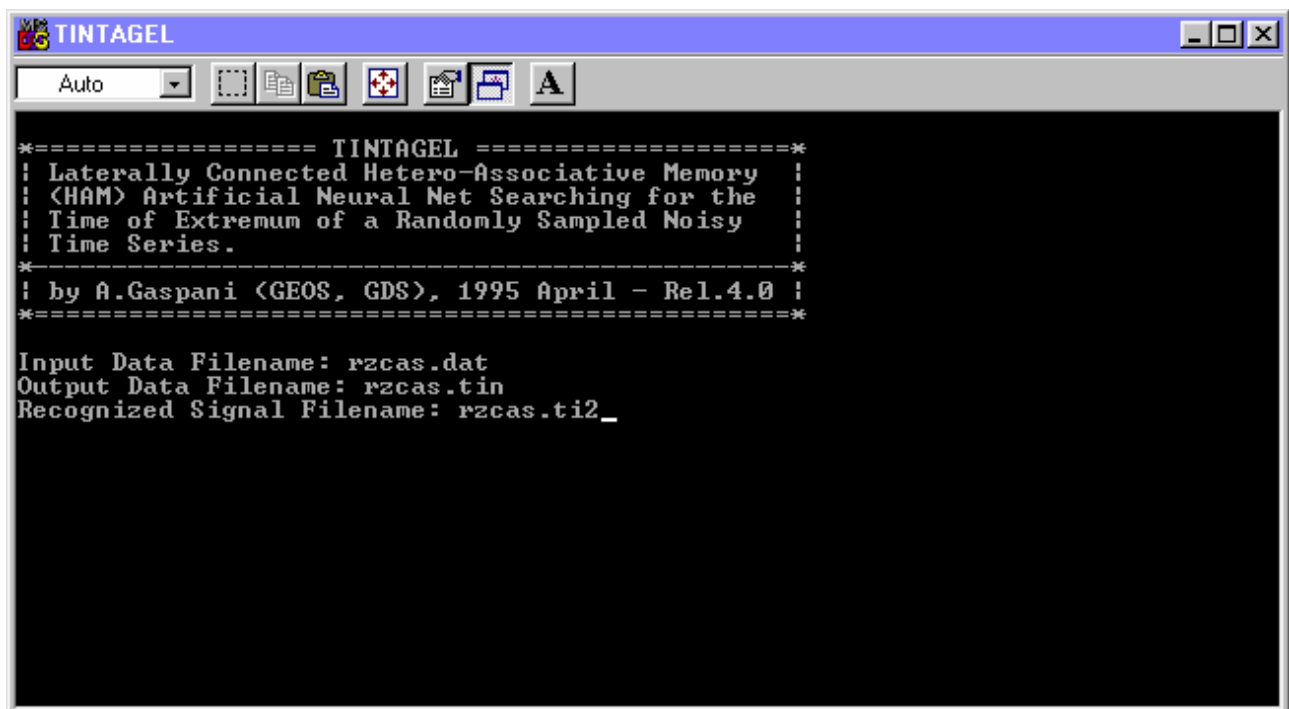
```
Time[space]Magnitude
0.2917      -6.7
0.3007      -6.9
0.3083      -7.1
...         ...
0.3639      -7.1
0.3681      -6.9
0.3750      -6.7
```

Run TINTAGEL computer program.

Input data filename: name of the DAT file (rzcas.dat)

Output data filename: name of the output file (rzcas.tin)

Restored Signal filename: output file (rzcas.ti2)



press enter

```
TINTAGEL
Auto
===== TINTAGEL =====
: Laterally Connected Hetero-Associative Memory :
: <HAM> Artificial Neural Net Searching for the :
: Time of Extremum of a Randomly Sampled Noisy :
: Time Series. :
: by A.Gaspani <GEOS, GDS>, 1995 April - Rel.4.0 :
=====
Input Data Filename: rzcas.dat
Output Data Filename: rzcas.tin
Recognized Signal Filename: rzcas.ti2

----- MEMORY PARAMETER -----
: The memory parameter is of fundamental :
: importance in order order to obtain an :
: effective signal recognition. :
: Setting up the memory parameter to k=1 :
: we have no signal recognition. :
: Setting up k=0 we have total inhibition :
: of the incoming signal. :
: The default choice is k=0.5, but k=0.4 :
: seems to be he best choice here. :
-----
Enter the Memory Parameter [0<K<1]: .4
```

type .4 for the memory parameter and press enter

```
Esecuzione terminata - TINTAGEL
Auto
Tintagel, rocky, desolate and lonely
place where the ocean crashes against
the wild windswept shores.
The land of Merlin the magician...

Doing neural processing...

-----
SIGNAL RECOGNITION H.A.M. NET
Number of Input Neurons : 50
Number of Output Neurons: 50
-----
EXTREMUM FINDING NET
Number of Input Neurons : 94
Number of Hidden Neurons: 2
Number of Output Neurons: 1
Total Number of Synapses: 190
-----
OPTIMAL RESULTS
Time of Extremum: To= 3.346887E-001
Error on the Extremum: e<To>= 9.578129E-004
=====
*** Program TINTAGEL executed!! ***
```

Output Files:

RZCAS.TIN

ASCII output file containing time of extremum and its error:

```
*===== TINTAGEL =====*
| Laterally Connected Hetero-Associative Memory |
| (HAM) Artificial Neural Net Searching for the |
| Time of Extremum of a Randomly Sampled Noisy |
| Time Series. |
*-----*
| by A.Gaspani (GEOS, GDS), 1995 April - Rel.4.0 |
*=====*

-----
          SIGNAL RECOGNITION H.A.M. NET
Number of Input Neurons :          50
Number of Output Neurons:          50
-----

          EXTREMUM FINDING NET
Number of Input Neurons :          94
Number of Hidden Neurons:           2
Number of Output Neurons:           1
Total Number of Synapses:         190
=====

          OPTIMAL RESULTS
      Time of Extremum:      To=  3.346887E-001
Error on the Extremum: e(To)=  9.578129E-004
=====
```

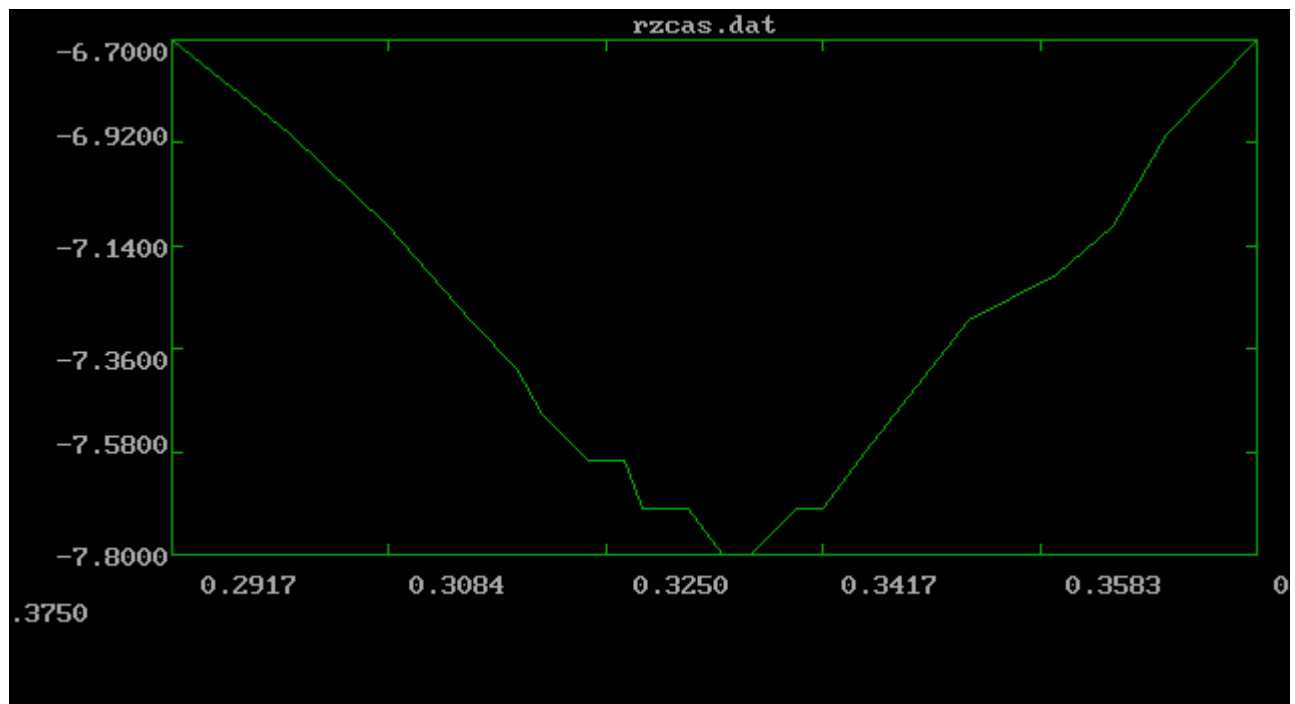
RZCAS.TI2

ASCII output file containing restored signal:

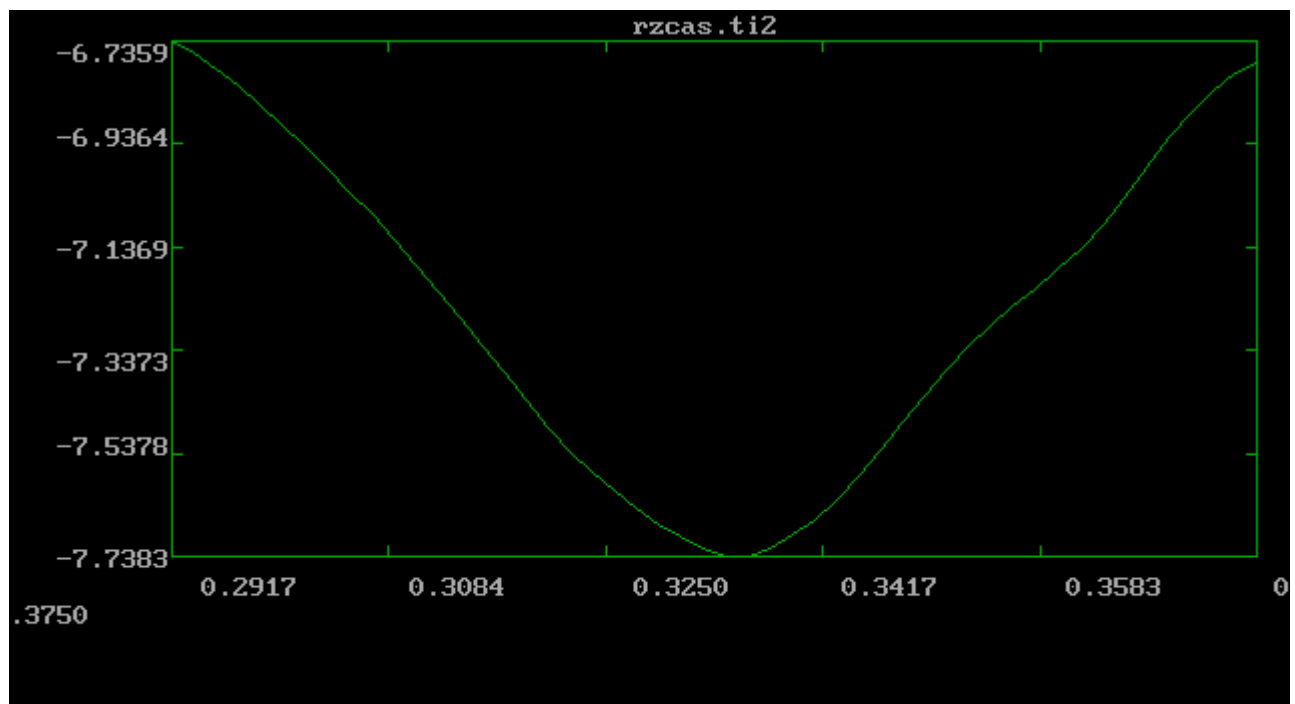
```
2.917000E-001      -6.7359230
2.934000E-001      -6.7598720
2.951000E-001      -6.7897130
...               ...
3.716000E-001      -6.8319080
3.733000E-001      -6.7981920
3.750000E-001      -6.7775190
```

Run MNG program

Type "plot rzcas.dat" and press enter to see the DATA file:



type "plot rzcas.ti2" and press enter to see the restored signal:



type "end" and press enter to exit from MNG