

A simple way to plot PAS distribution using CL (emmanuel.penou@irap.omp.eu)

Lesson 1

Step 1: Ask for a login on CL (mail to emmanuel.penou@irap.omp.eu). You will have a full access to the PAS public data (all data except the last 90 days).

Step 2: Connect on Clweb (doodle Clweb)

<http://clweb.irap.omp.eu> ▾ Traduire cette page

[Clweb page](#)

CLWeb is a web version of cl (software data). Documentation and Webservice description are available. ... The CI software has been originally created for the ...

[Clweb Beta \(penou:0\) noname.cl](#) [Mozilla Firefox](#)

Please select one or more
predefined panel (Shift key can ...

OX clweb Beta (penou:0)
noname.cl: plot_time=0.00 sec ...

[Introduction](#)

If you need a permanent account,
please send me an email ...

[Check](#)

clweb Beta (penou:0) noname.cl:
plot_time=0.00 sec ...

[CLWeb_poster](#)

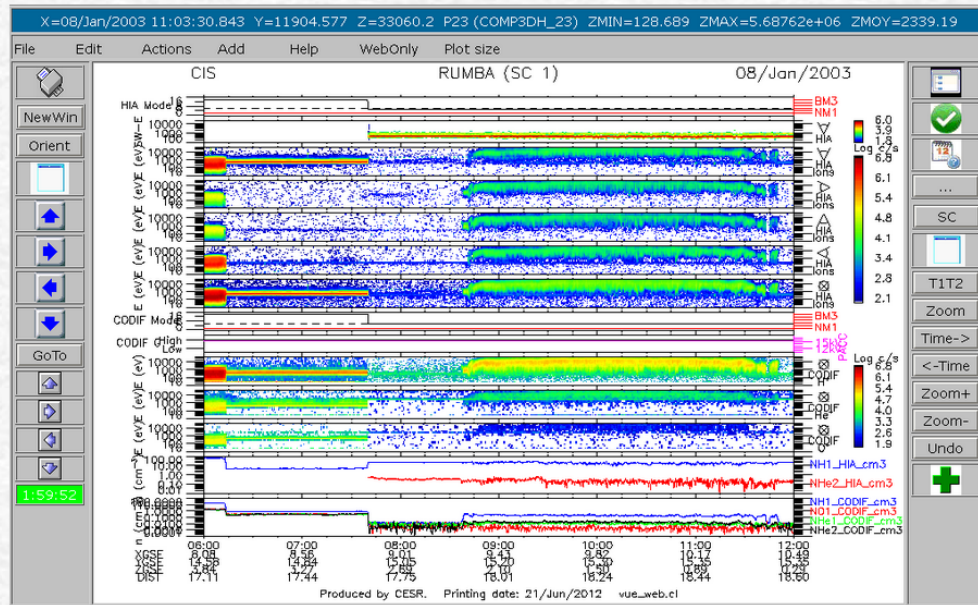
CI can plot a composition of panels
of the following types:.

[Webservice documentation](#)

- to get a CEF file:
`getParameter.php?parameterID ...`

[Autres résultats sur omp.eu »](#)

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Login:

Password:

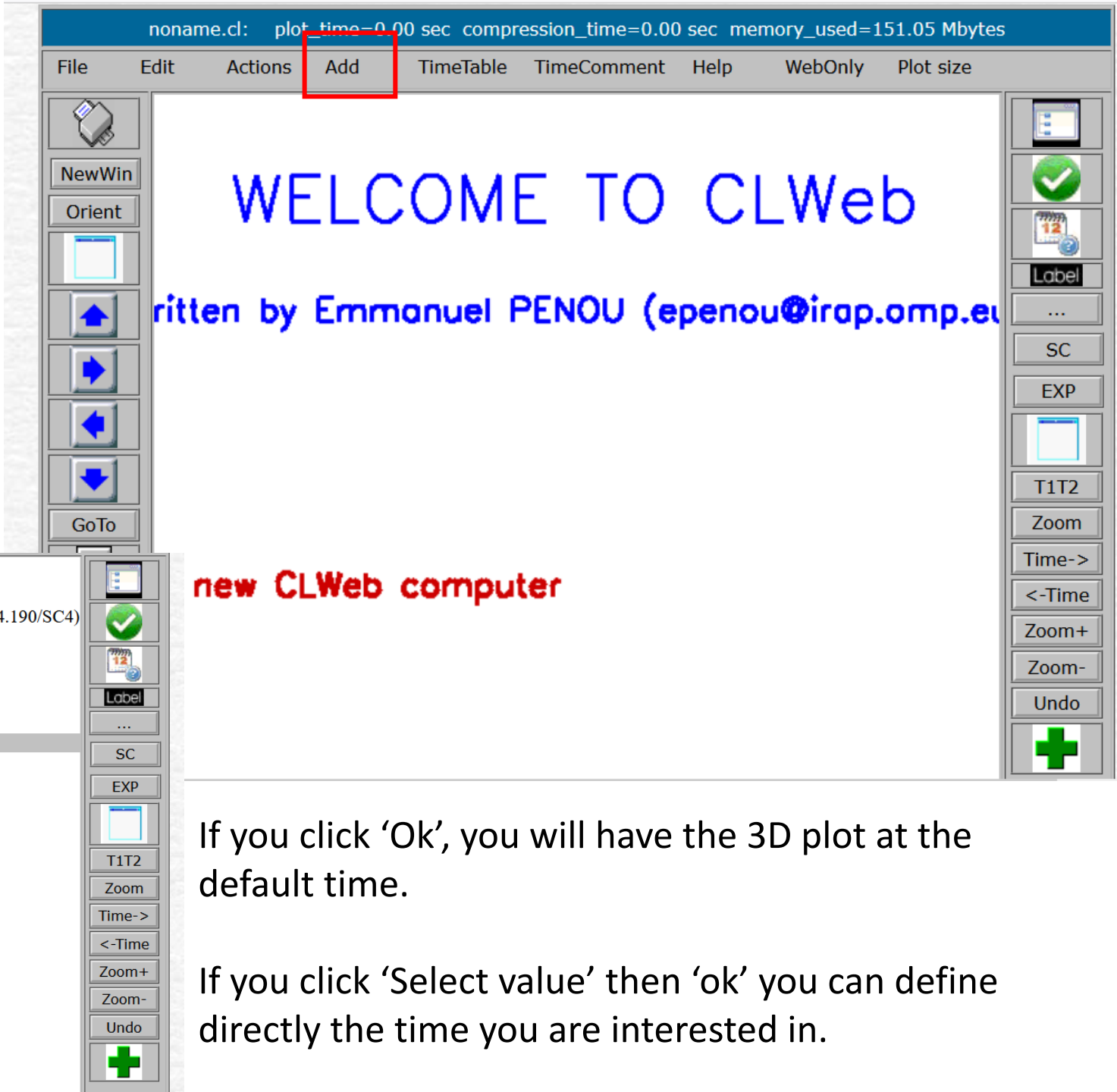
LOGIN

5+9 = ?

TRY CLWeb

Step 3: After login, you get this:

The simplest way to get a view of 3D VDF is: (1) put the mouse on **Add** (top menu). You get a list of projects. You go to **Solar-Orbiter** and get another menu. You go to **PAS**, get a new menu, go to 'Science' and there select 'Solar-Pas-science-fc3D-unique'. At this stage, you get this:

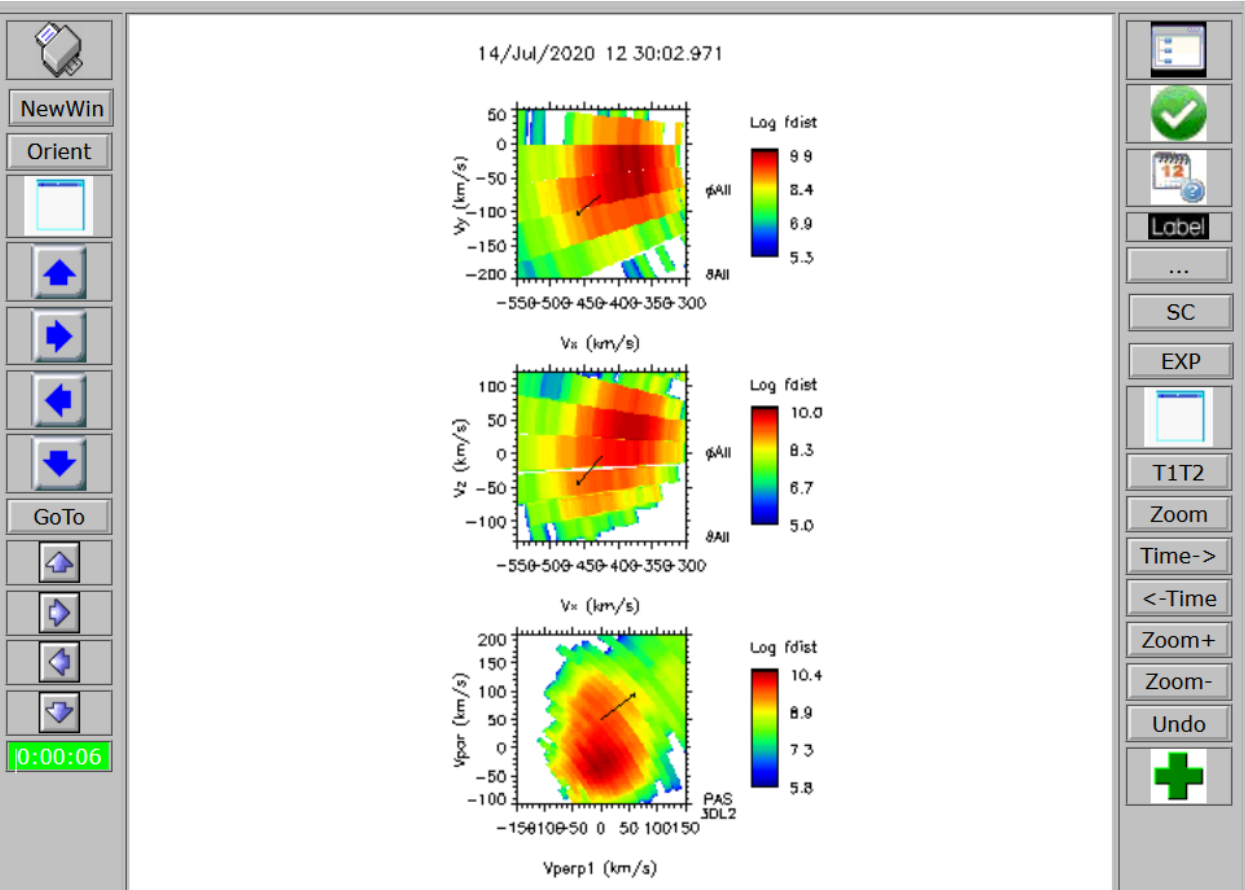


If you click 'Ok', you will have the 3D plot at the default time.

If you click 'Select value' then 'ok' you can define directly the time you are interested in.

Step 4: What you get after ‘Select value’ then ‘ok’ → (step 3). Here, you can enter the time (start and end). Have in mind that the distribution you will get is the first measured during the interval you select. After ‘Ok’, and a few seconds (10-20), you should get this:

This is our default plot for VDF.



The screenshot shows the time selection interface. It includes a toolbar on the left with buttons for NewWin, Orient, GoTo, and navigation arrows. The main area contains input fields for Start (DD MM YYYY [HH [MM [SS[.MSC]]]]) and End (DD MM YYYY [HH [MM [SS[.MSC]]]]) times, a dropdown for Spacecraft (4), and radio buttons for Time selection (Start / End and Carrington rotation). A table of time intervals is displayed, with columns for time, Carrington rotation, and a third column. The interface also includes a toolbar on the right with buttons for Label, SC, EXP, T1T2, Zoom, Time->, <-Time, Zoom+, Zoom-, and Undo.

Time	Carrington rotation	
2019-09-19T06:17:25.440Z	2019-10-16T12:53:51.360Z	2222
2019-10-16T12:53:51.360Z	2019-11-12T19:30:17.280Z	2223
2019-11-12T19:30:17.280Z	2019-12-10T02:06:43.200Z	2224
2019-12-10T02:06:43.200Z	2020-01-06T08:43:09.120Z	2225
2020-01-06T08:43:09.120Z	2020-02-02T15:19:35.040Z	2226
2020-02-02T15:19:35.040Z	2020-02-29T21:56:00.960Z	2227
2020-02-29T21:56:00.960Z	2020-03-28T04:32:26.880Z	2228
2020-03-28T04:32:26.880Z	2020-04-24T11:08:52.800Z	2229
2020-04-24T11:08:52.800Z	2020-05-21T17:45:18.720Z	2230
2020-05-21T17:45:18.720Z	2020-06-18T00:21:44.640Z	2231
2020-06-18T00:21:44.640Z	2020-07-15T06:58:10.560Z	2232
2020-07-15T06:58:10.560Z	2020-08-11T13:34:36.480Z	2233
2020-08-11T13:34:36.480Z	2020-09-07T20:11:02.400Z	2234
2020-09-07T20:11:02.400Z	2020-10-05T02:47:28.320Z	2235

These are slices in the phase space (see Louarn et al, A.A., 2021). The two first from the top are V_x , V_y and V_x , V_z slices, where x, y, z are the instrument axis. Most of the time, ‘ x ’ is ‘ $-R$ ’, ‘ y ’ is ‘ $-T$ ’ and ‘ z ’ is N (RTN frame). The arrows give the projection of B . The bottom plot is the same in V_{per}/V_{para} . The arrow is here the bulk flow

Step 5: Save the plot. Click on the printer logo and → select the type of plot (ps, pdf, ...) you want.

Step 6: Changing time. Click on T1T2. You get a new window, put the time you want and click 'Ok'.

You can also click on 'Time->' (or the reverse) and you get the next (or last) measured VDF.

Step 7: For specialist, there are many ways to do what you want with the menu... but this requires some more practice !

You can start by clicking in the centre of one of the plots. You get a blue frame around the selected plot and then, you click on '...' (menu on the right).



Step 8: Start the ‘fun’ . After selecting the plot and clicking ‘...’, you get much more complex menu where you can define or parametrize what you want. Personnaly, I use Time, X, Yleft and Z to define the sampling time or to adapt the range in x, y or the levels (z min and z max) in the plot. Before you do something, select ‘manual’ otherwise the plot stay in automatic range.

NewWin

Orient

GoTo

Position

ASCII_CEF_CDF

Type

Experiment

Products

Tools

Time

X

Yleft

Data

Yright

Z

Colors

Nbcolors

Left Winsize

0.175000

Right Winsize

0.225000

Title

☐ Wording

☐ Unit

Spacecraft

4

Cjf

fdist->fdist

Use one count level

No

Use raw energy-theta-phi values

No

B resolution

L2_SRF-NORMAL

B average

Automatic

N =

1.0

Only one value per spin

Yes

Xaxis

TIME

X Average

Yes

Yleftaxis

E

Y addition

1

Create Time_Emax file ?

No

Emin

0.00000

Emax

100000.

Filename

time_emax

NewWin

Orient

Position

ASCII_CEF_CDF

Type

Experiment

Products

Tools

Time

X

Yleft

Data

Yright

Z

Colors

Nbcolors

Yval

Yes

Linear

No line

for X =

0.

Ymin Ymax

Manual

Ymin

-100.000

Ymax

200.000

Label

...

SC

EXP

T1T2

Zoom

Time->

Example after clicking Yleft

Step 8 continue'd: Something important in the 'data' menu: When you click 'Data', you get a long and rather complex menu. Part of the menu contains this, I explain a little the most important...

0:00:44

Bulk Velocity

Automatic

Bulk Velocity (km/sec) Vx

0.00000

Vy

0.00000

Vz

0.00000

Remove distribution function

None

Nb spectro

1

Property

1

2

3

4

5

6

7

8

9

10

Theta(Az)

All

1

2

3

4

5

6

7

8

9

Phi(EI)

All

1

2

3

4

5

6

7

8

9

Emin

1

Emax

100000000

Width (km/sec)

100.000

Interpolation

None

Distribution

2D

Vperp1

Vpar

V1

0 1 0

V2

0 0 1

PT

0 00 00

Vpar (km/sec)

Angle AX (3D only)

0

Here, you can select the central velocity of your 'slice'. Could automatic or defined by hand ...

Here, you can select the 'thickness' of the slice. 50 to 100 km/s are good for PAS data

Here, you can select the type of slice (the axis of your plot). If you select 'V1 V2 at PT' in this menu, you can select the plan of the slice by specifying V1 (3 coordinates in km/s) , V2 and PT. Interesting but not so easy...

End of first lesson and enjoy....