

Splot taszk használata

Splot - mire jó?

- Kirajzolja a spektrumot
- Analizálja a spektrumot

Splot - taszk

Noao => onedspec => *splot*
imred => echelle => *splot*

```
szkati@triton:~  
IRAF  
Image Reduction and Analysis Facility  
PACKAGE = echelle  
TASK = splot  
  
images = J0002702.dc List of images to plot  
line = 42 Image line/aperture to plot  
band = 3 Image band to plot  
(units = Angstrom) Plotting units  
(options= auto wreset ) Combination of plotting options:  
auto, zero, xydraw, histogram,  
nosysid, wreset, flip, overplot  
(xmin = INDEF) Minimum X value of initial graph  
(xmax = INDEF) Maximum X value of initial graph  
(ymin = INDEF) Minimum Y value of initial graph  
(ymax = INDEF) Maximum Y value of initial graph  
(save_fi= ) File to contain answers  
(graphic= stdgraph) Output graphics device  
(cursor = ) Graphics cursor input  
  
# PARAMETERS FOR ERROR ANALYSIS  
(nerrsam= 0) Number of error samples (<10 for no errors)  
More  
  
ESC-? for HELP
```

Splot - taszk

Noao => onedspec => *splot*
imred => echelle => *splot*

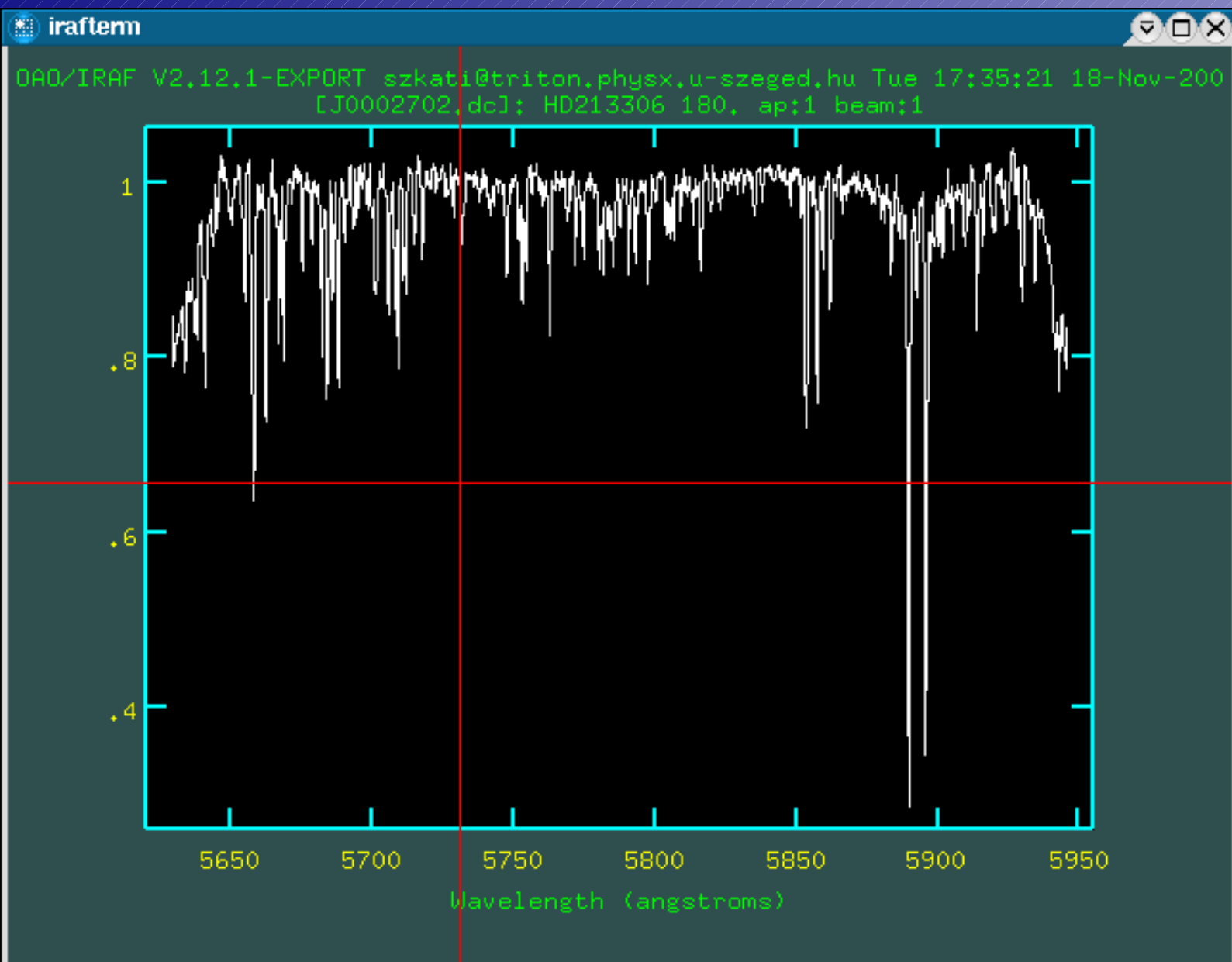
```
szkati@triton:~  
IRAF  
Image Reduction and Analysis Facility  
PACKAGE = echelle  
  TASK = splot  
More  
(sigma0 =  INDEF) Constant gaussian noise term (INDEF for no error  
(invgain= INDEF) Inverse gain term (INDEF for no errors)  
  
# PARAMETERS FOR CONTINUUM FITTING  
(function= spline3) Fitting function  
(order = 1) Order of fitting function  
(low_rej= 2.) Low rejection in sigma of fit  
(high_re= 4.) High rejection in sigma of fit  
(niterat= 10) Number of rejection iterations  
(grow = 1.) Rejection growing radius in pixels  
(markrej= yes) Mark rejected points?  
  
# PARAMETERS FOR OVERPLOTING STANDARD STAR FLUX  
star_nam= Standard star name  
mag = Magnitude of star  
magband = Magnitude type  
teff = Effective temperature or spectral type  
More  
  
ESC-? for HELP
```

Splot - taszk

Noao => onedspec => *splot*
imred => echelle => *splot*

```
szkati@triton:~  
IRAF  
Image Reduction and Analysis Facility  
PACKAGE = echelle  
  TASK = splot  
More  
(caldir = █ )_caldir) Directory containing calibration data  
(fnuzero= 3.6800000000000000E-20) Absolute flux zero point  
  
# PARAMETERS USED IN INTERACTIVE QUERIES  
next_ima=      Next image to plot  
new_imag=      Image to create  
overwrite=    no  Overwrite image?  
spec2   =      Spectrum  
constant=      Constant to be applied  
waveleng=      Dispersion coordinate;  
linelist=      File  
wstart  =      Starting wavelength  
wend    =      Ending wavelength  
dw      =      Wavelength per pixel  
boxsize =      Smoothing box size (odd number)  
(mode   =      ql)  
  
ESC-? for HELP
```

Spektrum



q : kilépés

Analizálás

Billentyű kombinációk:

2xa: nagyítás

w+a: egész spektrum megjelenítése

j: javítás

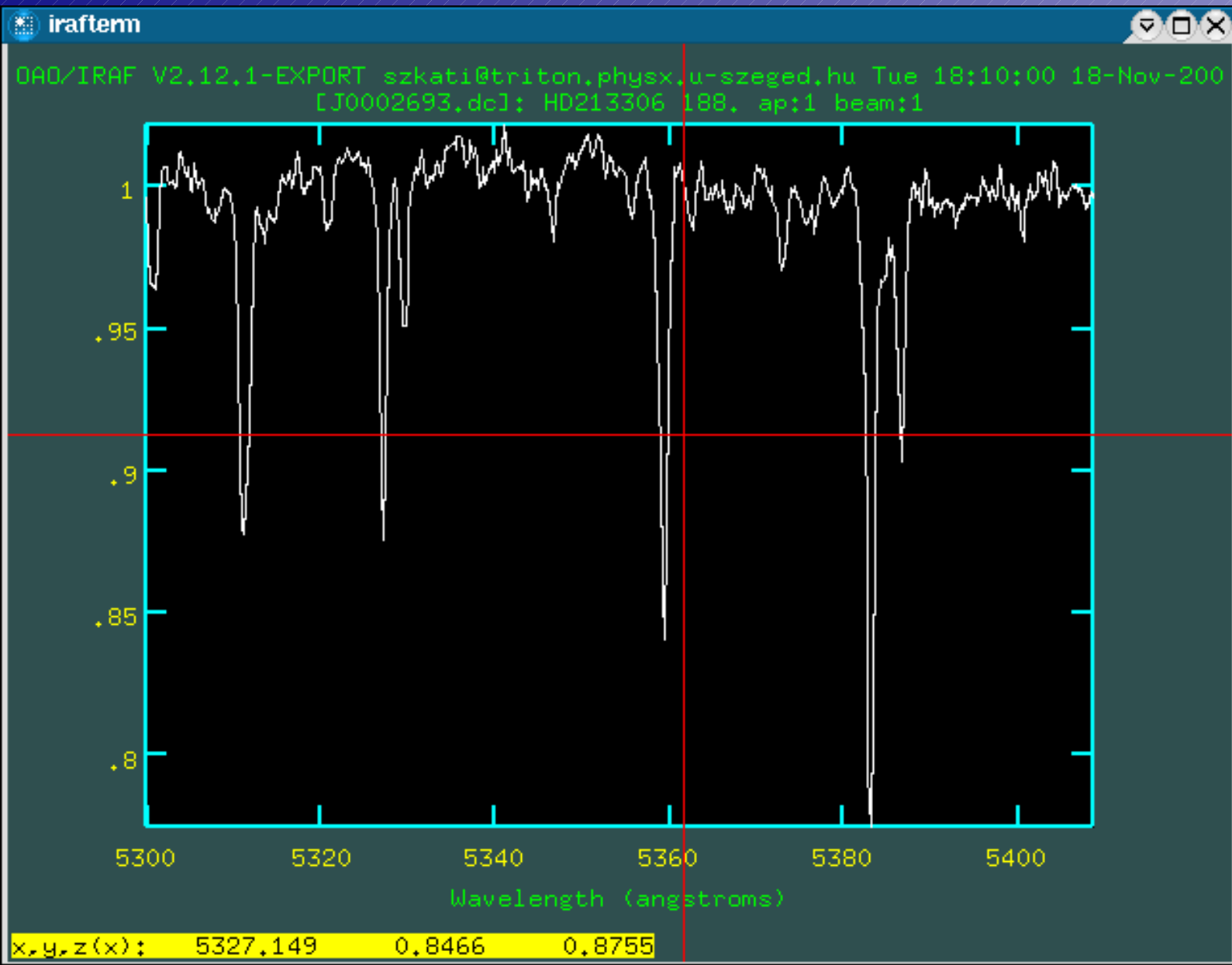
i: kép mentése

r: újrarajzoltatás

(): rendek közötti lépegetés

?: help => 2xq: visszalépés a grafikus ablakba

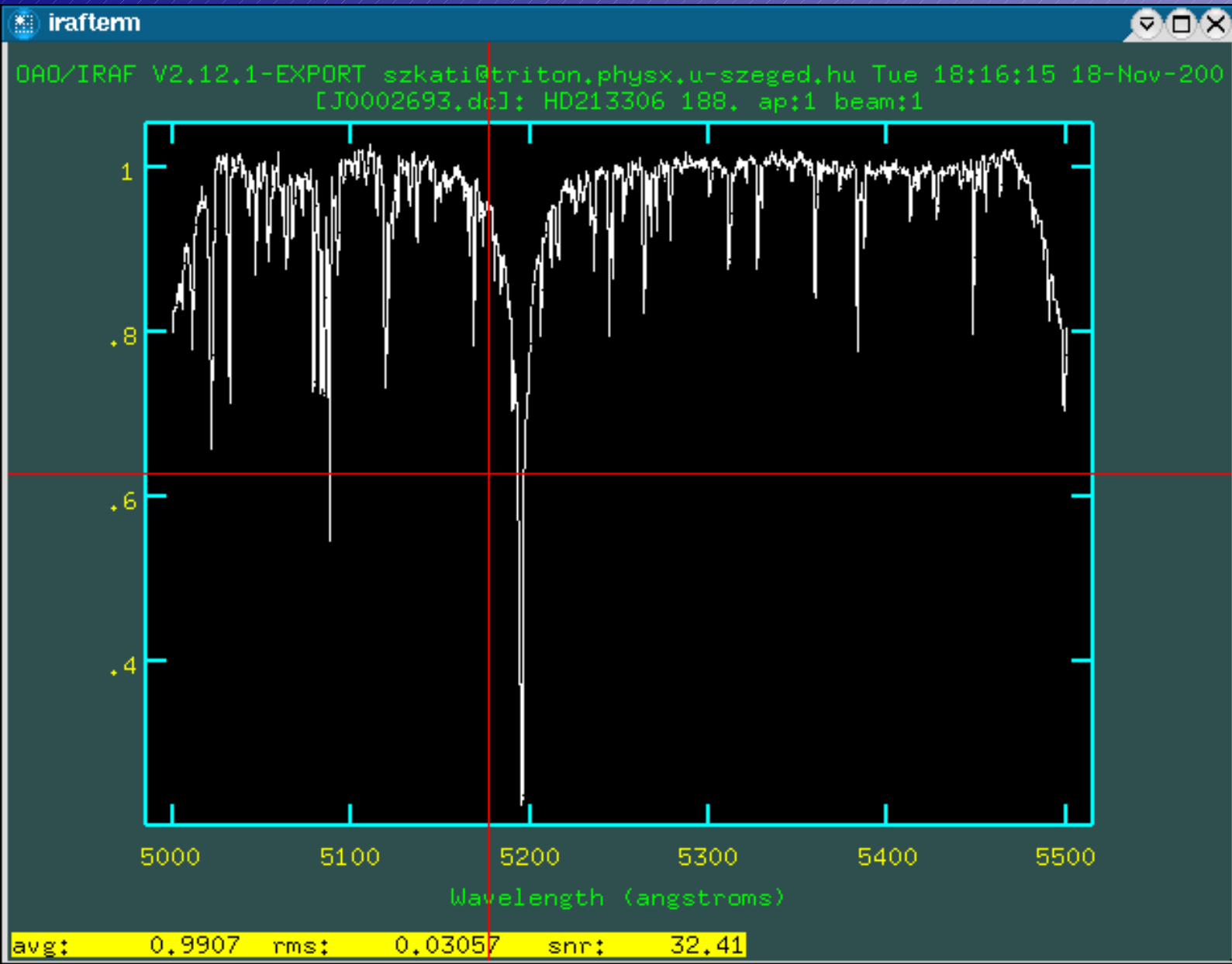
Analizálás



Space:

- x koordináta
- y koordináta
- a legközelebbi spektrum érték

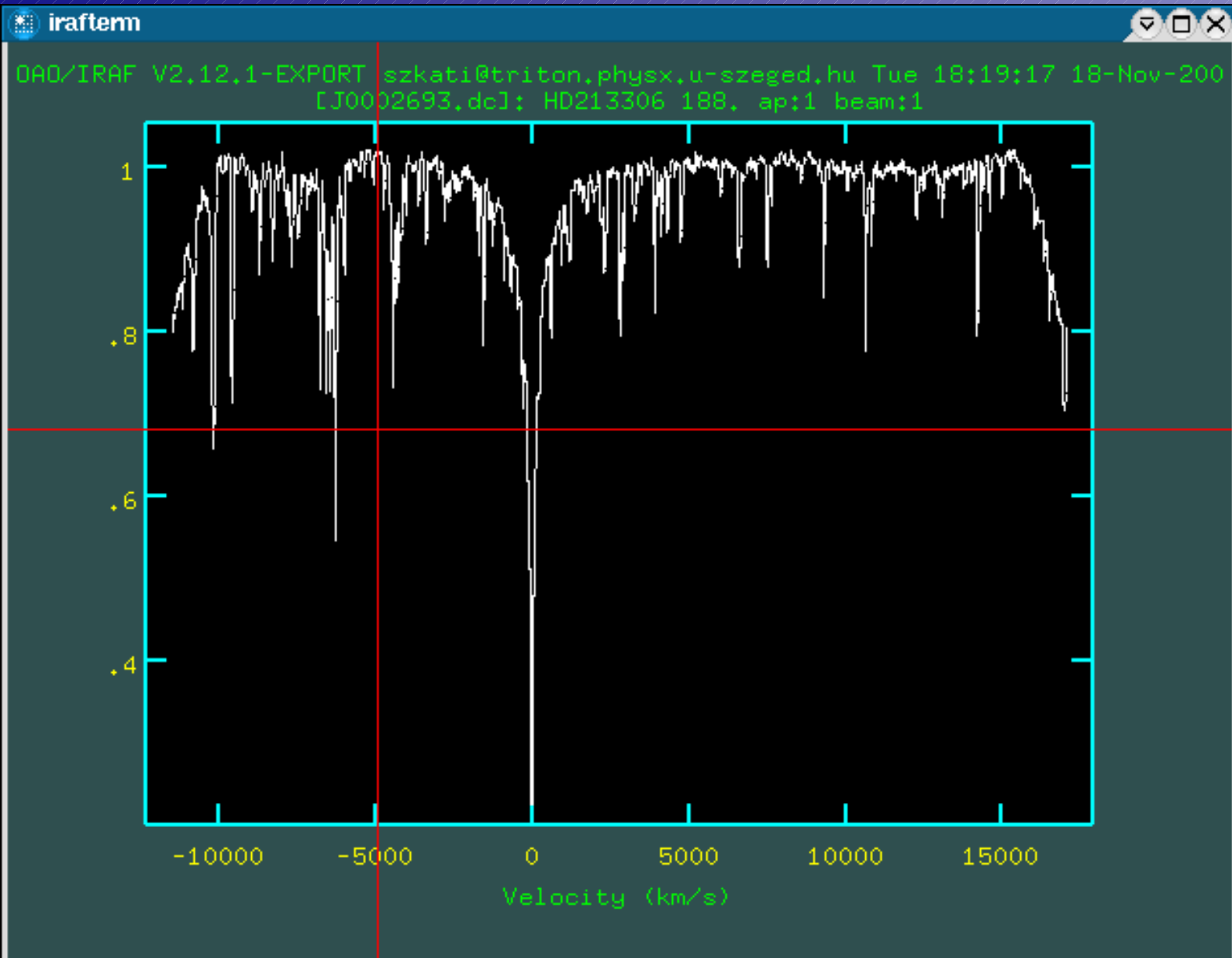
Analizálás



2 x m:

- Kijelölt szakasz átlagértéke
- Szórás
- jel/zaj

Analizálás



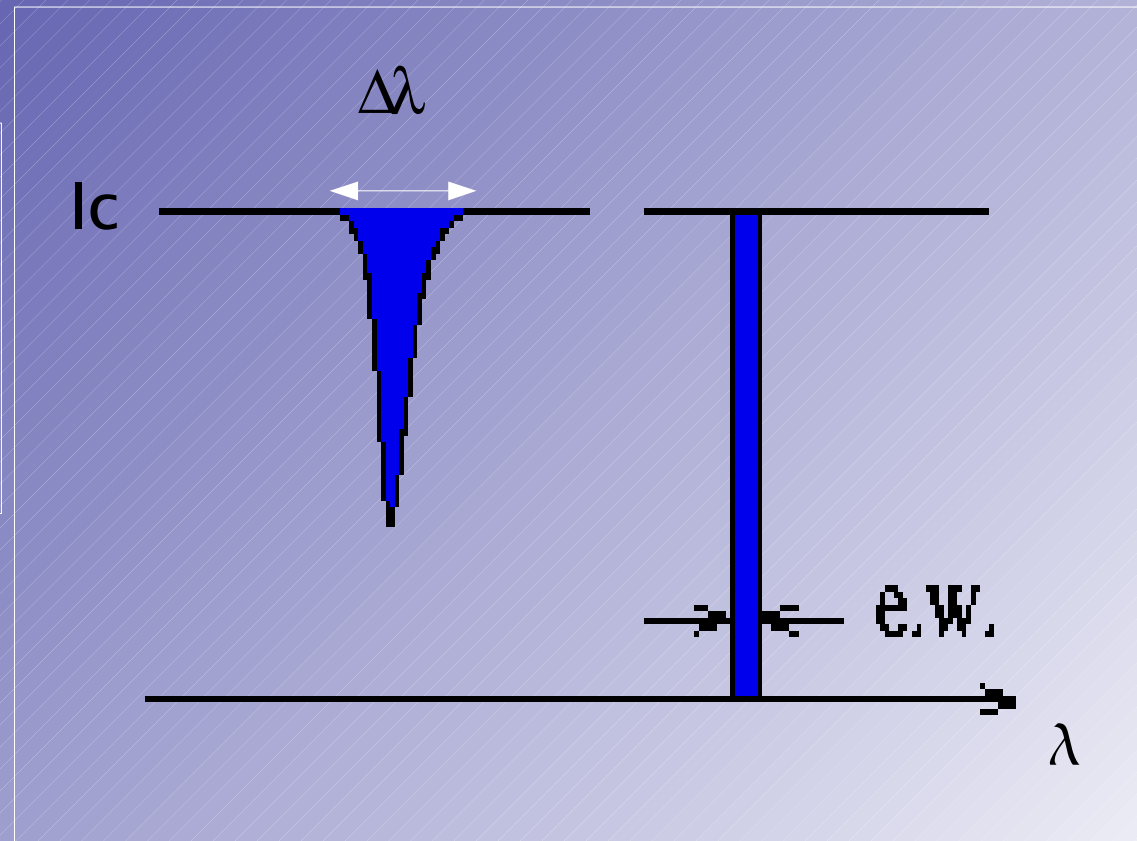
v:

Sebességskála
=> Mekkora
seb.eltolódásnak
felel meg a két
vonal eltérése

=> v: visszatérés

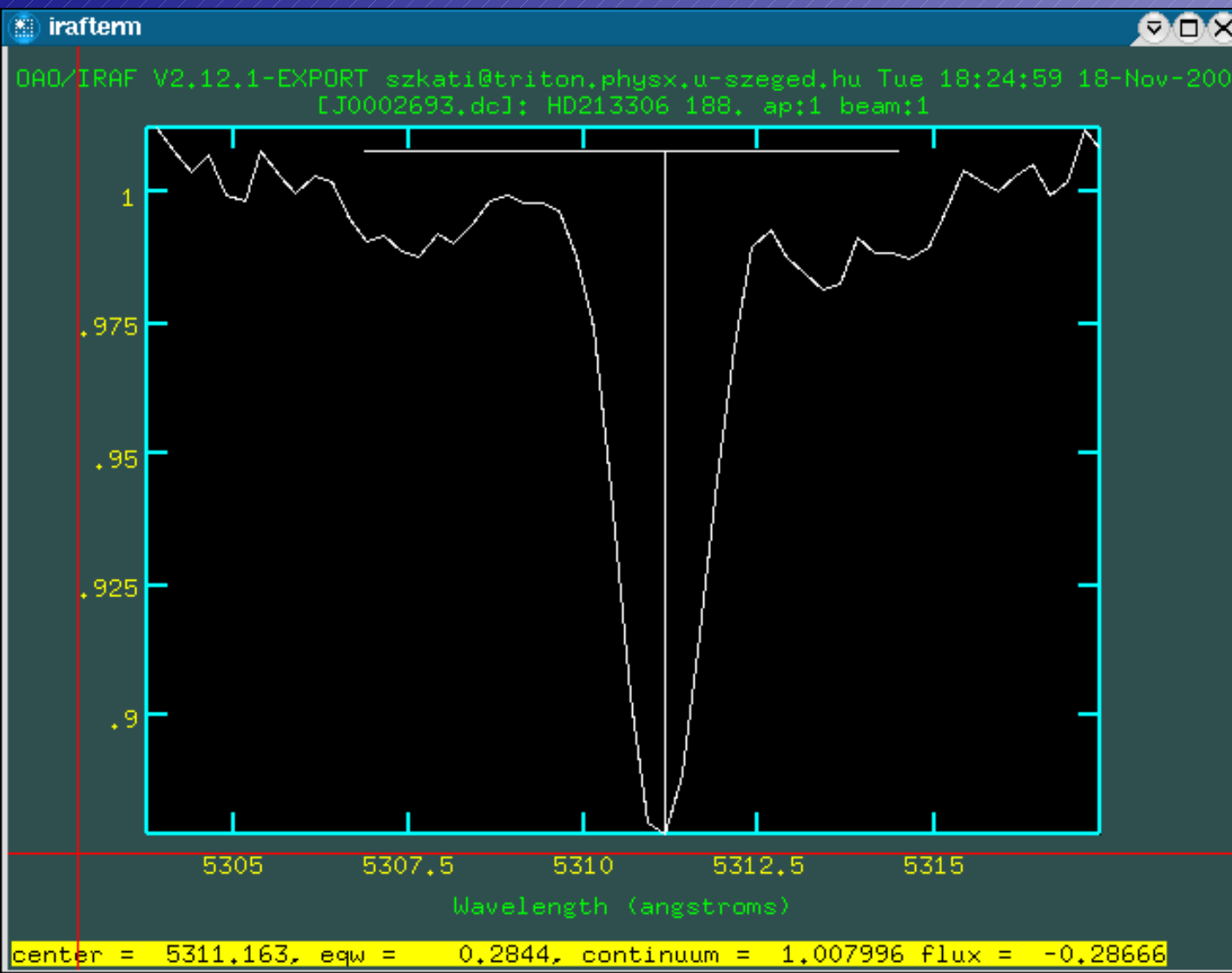
Ekvivalens vonalszélesség

$$W = \int_{\Delta\lambda} \frac{I_c - I_\lambda}{I_c} d\lambda$$



Ekvivalens vonalszélesség

1. módszer:



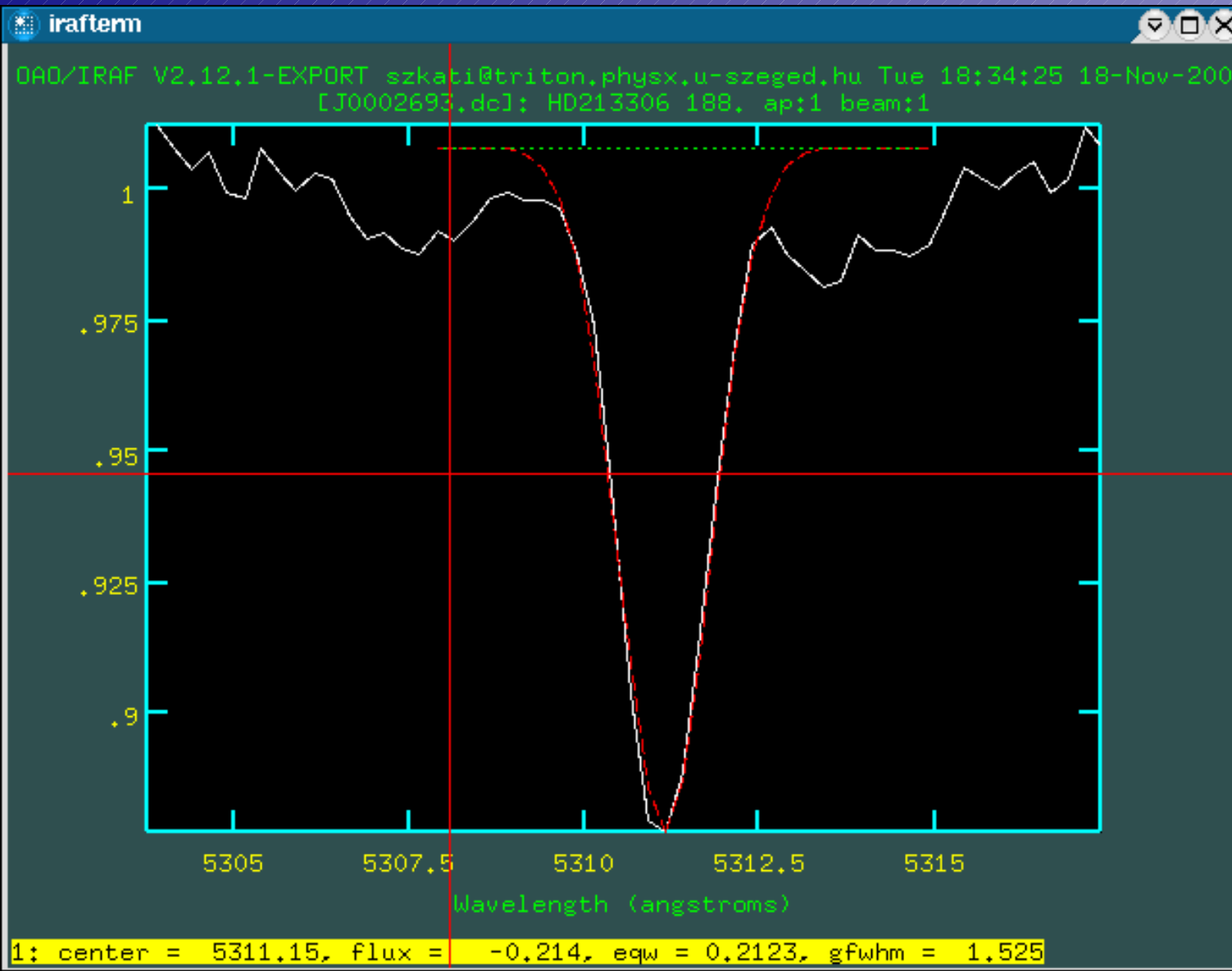
2 x e:

berajzolja a
kontinuumot,

- vonal centruma,
- ekvivalens szélesség
- Kontinuum

Ekvivalens vonalszélesség

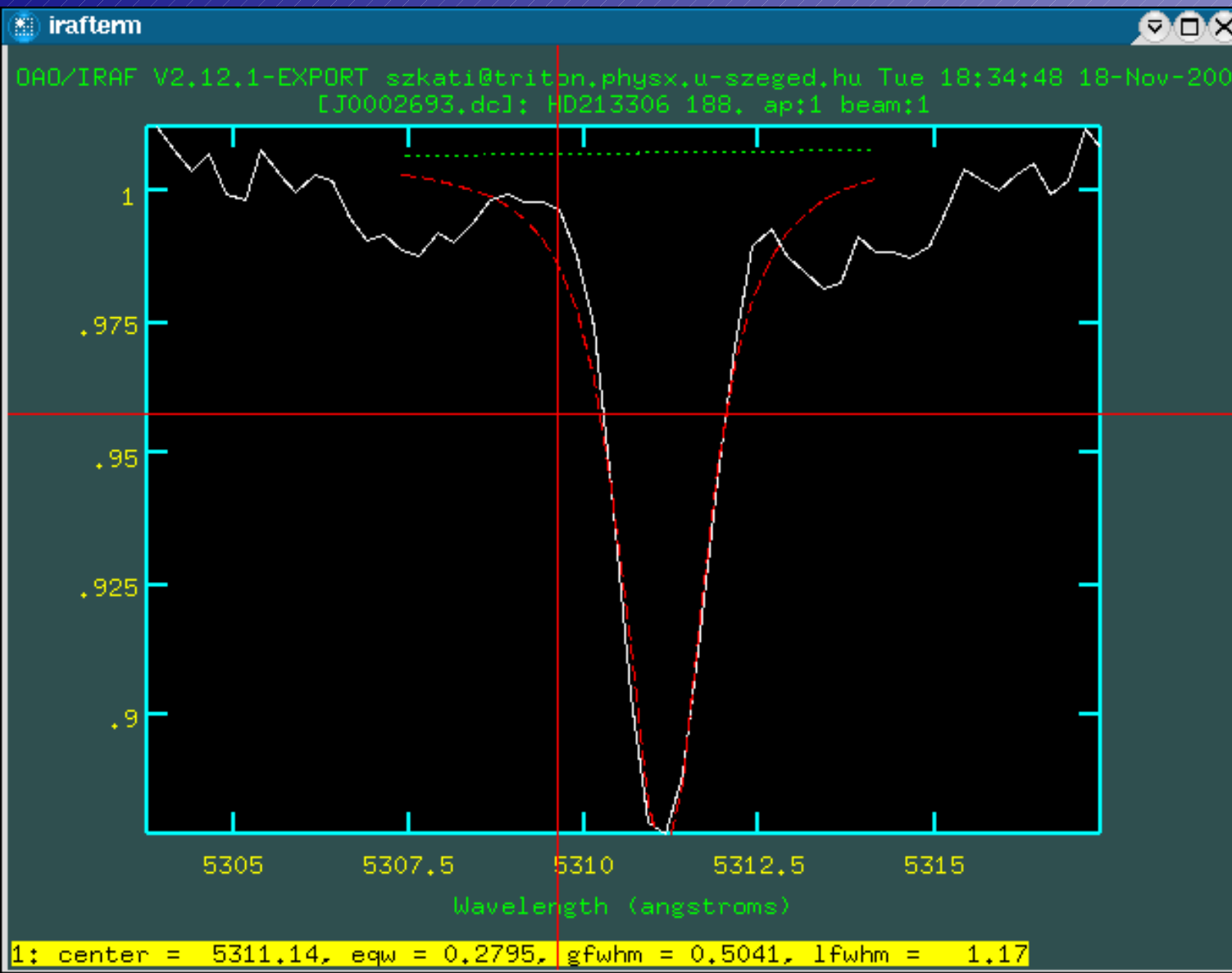
2. módszer: Profilok illesztése



Két végpont:
k-k => Gauss-
görbe

Ekvivalens vonalszélesség

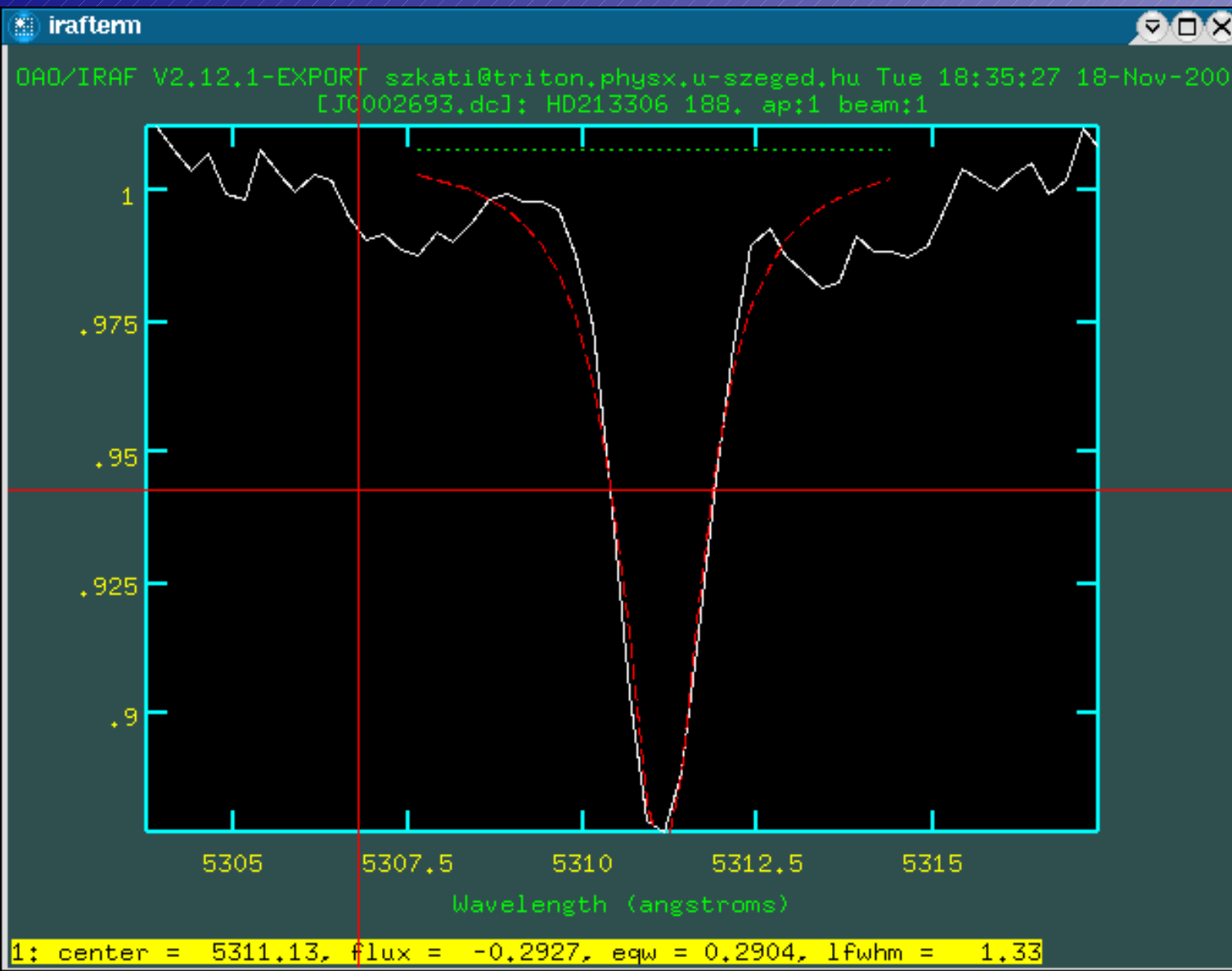
2. módszer:



Két végpont:
k-v => Voigt-
függvény

Ekvivalens vonalszélesség

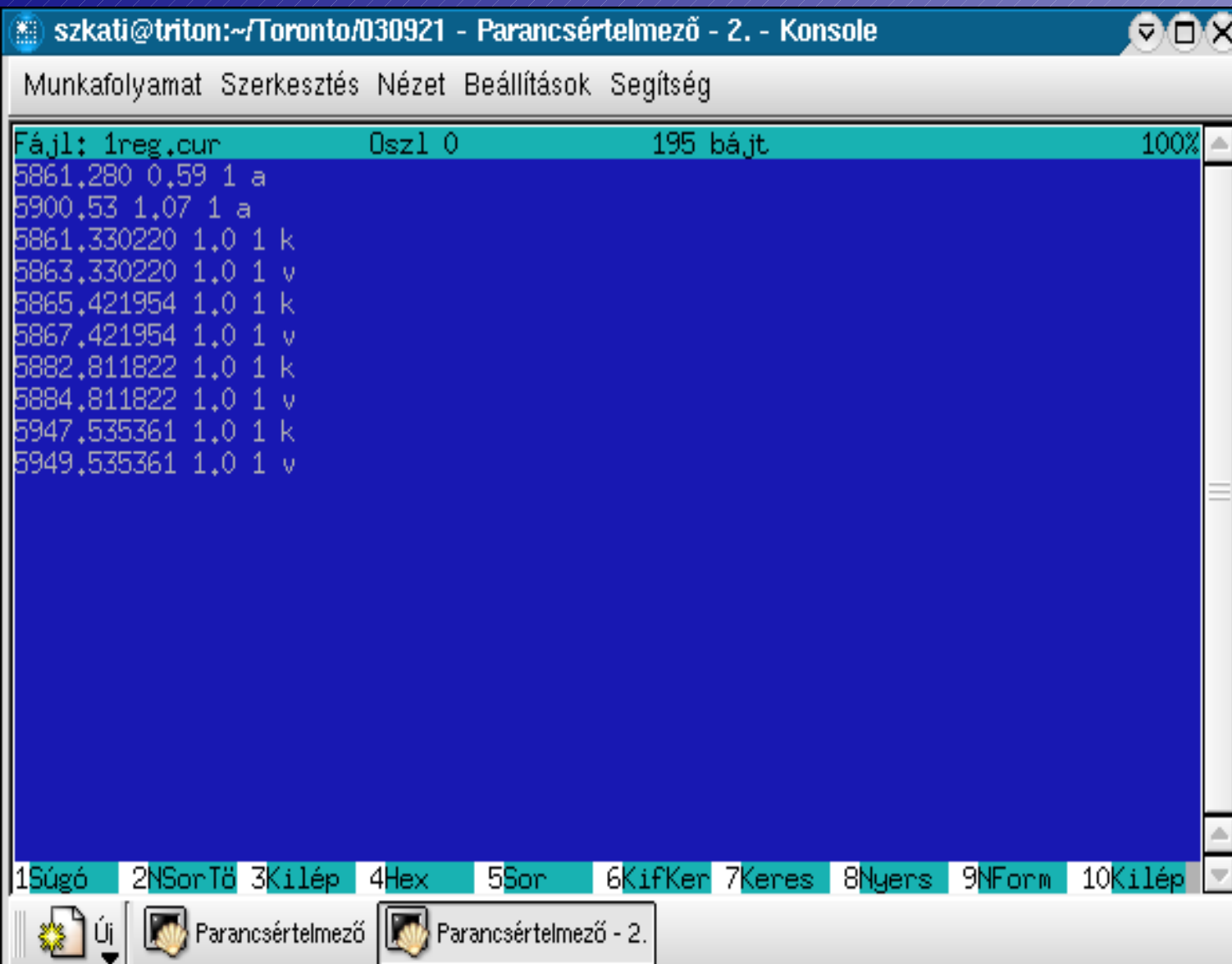
2. módszer:



Két végpont:
k-l =>
Lorentz-görbe

Ekvivalens vonalszélesség

Sok vonal esetén: **Cursor file készítés**



```
szkati@triton:~/Toronto/030921 - Parancsértelmező - 2. - Konsole
Munkafolyamat Szerkesztés Nézet Beállítások Segítség
Fájl: 1reg.cur Oszl 0 195 bájt 100%
5861,280 0,59 1 a
5900,53 1,07 1 a
5861,330220 1,0 1 k
5863,330220 1,0 1 v
5865,421954 1,0 1 k
5867,421954 1,0 1 v
5882,811822 1,0 1 k
5884,811822 1,0 1 v
5947,535361 1,0 1 k
5949,535361 1,0 1 v
1Súgó 2NSorTö 3Kilép 4Hex 5Sor 6KifKer 7Keres 8Nyers 9NForm 10Kilép
```

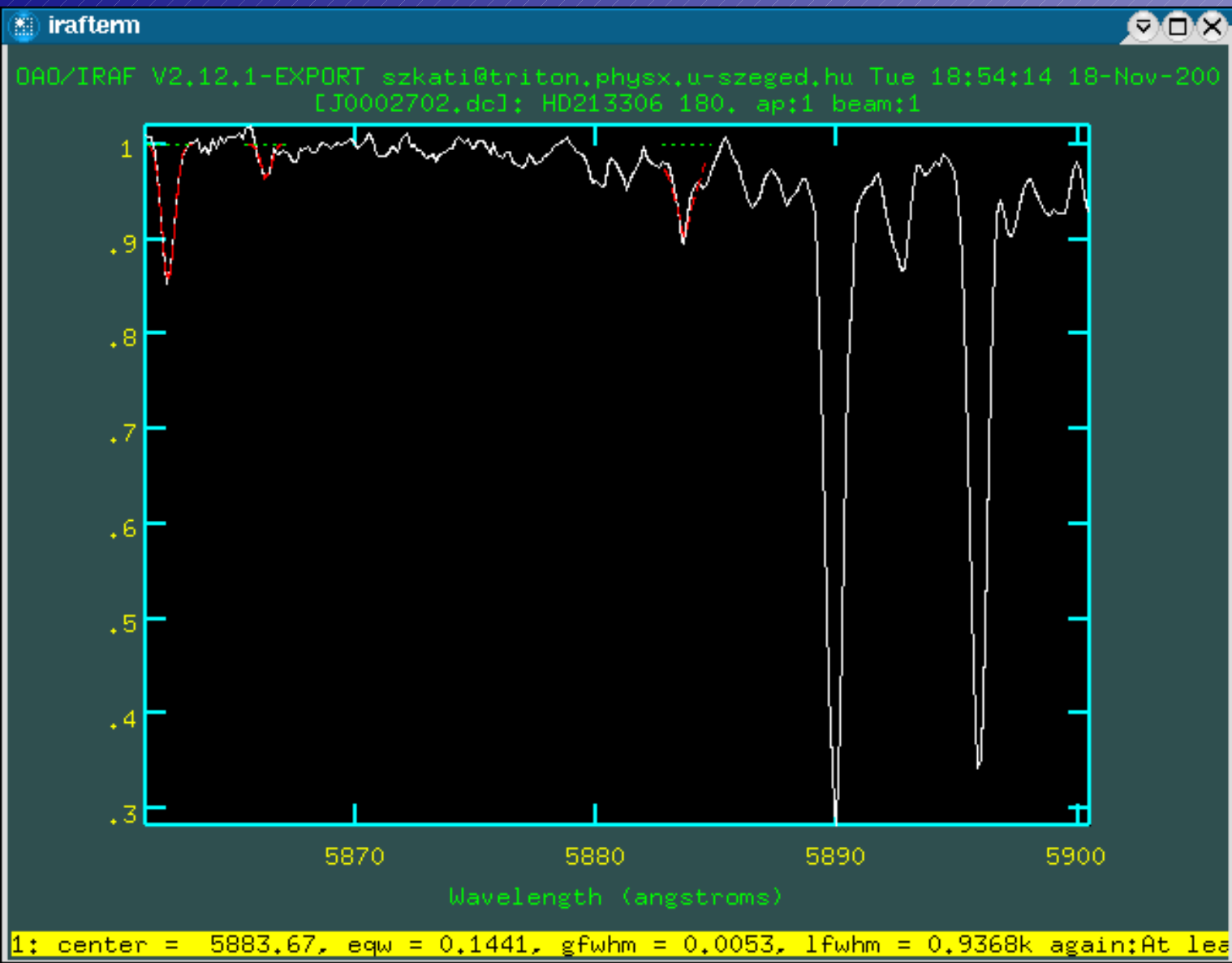
Ekvivalens vonalszélesség

Sok vonal esetén:

```
szkati@triton:~  
IRAF  
Image Reduction and Analysis Facility  
PACKAGE = onedspec  
TASK = splot  
  
images = J0002693.dc List of images to plot  
line = 1 Image line/aperture to plot  
band = 1 Image band to plot  
(units = ) Plotting units  
(options= auto wreset) Combination of plotting options:  
auto, zero, xydraw, histogram,  
nosysid, wreset, flip, overplot  
(xmin = INDEF) Minimum X value of initial graph  
(xmax = INDEF) Maximum X value of initial graph  
(ymin = INDEF) Minimum Y value of initial graph  
(ymax = INDEF) Maximum Y value of initial graph  
(save_fi= splot.log) File to contain answers  
(graphic= stdgraph) Output graphics device  
(cursor = 1reg,cur) Graphics cursor input  
  
# PARAMETERS FOR ERROR ANALYSIS  
(nerrsam= 0) Number of error samples (<10 for no errors)  
More  
  
ESC-? for HELP
```

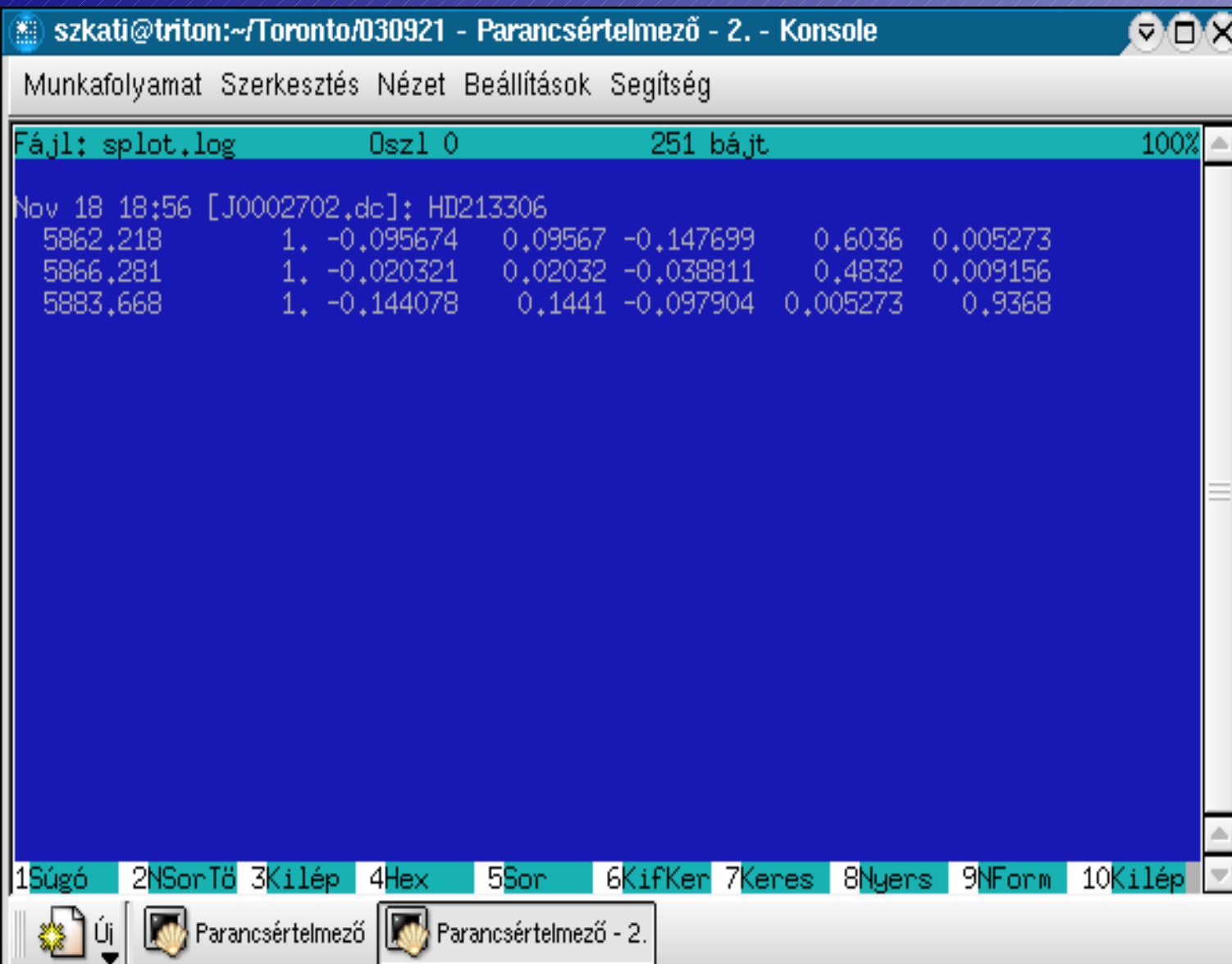
Ekvivalens vonalszélesség

Sok vonal esetén: futtatás eredménye



Ekvivalens vonalszélesség

Sok vonal esetén: **log file tartalma**



The screenshot shows a terminal window titled "szkati@triton:~/Toronto/030921 - Parancsértelmező - 2. - Konsole". The window displays the contents of a file named "splot.log", which is 251 bytes in size. The log file contains a timestamp "Nov 18 18:56 [J0002702.dc]: HD213306" followed by three lines of numerical data. The data is presented in a table-like format with seven columns. The first column contains values 5862.218, 5866.281, and 5883.668. The second column contains the value 1. for all three rows. The remaining five columns contain various decimal values.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
5862.218	1.	-0.095674	0.09567	-0.147699	0.6036	0.005273
5866.281	1.	-0.020321	0.02032	-0.038811	0.4832	0.009156
5883.668	1.	-0.144078	0.1441	-0.097904	0.005273	0.9368

The terminal window also shows a menu bar with options: Munkafolyamat, Szerkesztés, Nézet, Beállítások, Segítség. At the bottom, there is a status bar with menu items: 1Súgó, 2NSorTö, 3Kilép, 4Hex, 5Sor, 6KifKer, 7Keres, 8Nyers, 9NForm, 10Kilép. The taskbar at the very bottom shows icons for "Új" and two instances of "Parancsértelmező".