mideshift_xy

Measuring the central wavelength of the center of an absorption line.

Syntax

MIDESHIFT_XY,wavelength,flux,xmin,ymin,sigmax,npoints=npoints,order=order, interp=interp,minabs=minabs,noisy=noisy,noplot=noplot,tpb=tpb

Return Values

xmin - (double) wavelength of the line center

ymin - (double) flux at xmin

sigmax - (double) 1-sigma error associated with the measurement of xmin

Arguments

wavelength - (dblarr) wavelengths (angstroms); absolute values

flux (fltarr) - fluxes

Keywords

- npoints- number of pixels around the minimum to enter the fit. (default: 7) It has to be an even number.
- order - order of the polynomial (defult: 3 = third order)
- interp - when on, we use a spline interpolation to improve sampling (step= 0.005 A)
- minabs - min. central absorption of a line in order to be considered (default: 0.98)
- noisy - if set, we measure line shifts of lines with irregular shapes close to the line center. Otherwise, we don't.

- noplot - when set, it does not produce any plot
- tpb - two-point-bisector tecnique (Hamilton & Lester 1999)

Discussion

This routine is intended for measuring, in an automated fashion, the central wavelengths of absorption lines in stellar spectra.

When a measurement cannot be performed, -1000 is return in xmin,ymin and sigmax.

References

Allende Prieto, C., Asplund, M., García López, R. J., & Lambert, D. L. 2002, ApJ, 567, 544

Allende Prieto, C., Lambert, D. L., Tull, R. G., & MacQueen, P. J. 2002, ApJ, 566, L93

Allende Prieto, C., & Garcia Lopez, R. J. 1998, A&AS, 131, 431

Allende Prieto, C., & Garcia Lopez, R. J. 1998, A&AS, 129, 41

Hamilton, D., & Lester, J. B. 1999, PASP, 111, 1132

Version History

C. Allende Prieto, UT, 1999

C. Allende Prieto, UT, 2001 included spline interp. to improve sampling

C. Allende Prieto, UT, 2001 more rigorous determination of error in lambda implementation of 'security' checks

C. Allende Prieto, UT, 2006 fixed a bug in the determination of the error and added a 2nd error estimate, the average of the two is kept as tests indicate it is more robust than either method alone.