Subject: Re: wavelength calibration Posted by rogass on Thu, 03 Nov 2011 20:05:26 GMT

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On 1 Nov., 15:08, Gray <grayliketheco...@gmail.com> wrote:
> Hello IDL gurus,
>
> I have a night-sky emission spectrum (from my data), and a list of
> irregularly-gridded night-sky lines (from the literature). I'm trying
> to perform a wavelength calibration of my data; I have a guite poor
> zeroth-order solution already.
> My best idea so far was to perform a cross-correlation of the two data
> sets to find the wavelength shift and then do some least-squares
> fitting to find a better solution. However, I'm not sure how to
> perform the cross-correlation.
> My data is in the form:
> (a) n-element array of spectrum data points
> (b) n-element array of zeroth-order wavelengths
> (c) m-element array of night-sky emission line wavelengths (irregular)
> (d) m-element array of night-sky emission line strengths
> So my questions are:
> 1) How do I compute the cross-correlation between these two sets of
> data?
> 2) Is this the best way to go about it?
> Thank you as always...
> --Gray
Hi.
2) it depends on:)
Just look for smile correction, e.g.:
with known endmember:
Guanter, L., Segl, K., Sang, B., Alonso, L., Kaufmann, H., Moreno, J.
(2009): Scene-based
spectral calibration assessment of high spectral resolution imaging
spectrometers. - Optics
Express, 17, 14, 11594-11606, DOI: 10.1364/OE.17.011594
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with atmospheric absorptions:

Richter, Rudolf und Schläpfer, Daniel und Müller, Andreas (2011) Operational atmospheric correction for imaging spectrometers

accounting for the smile effect.

IEEE Transactions on Geoscience and Remote Sensing, 49 (5), Seiten 1772-1780.

IEEE. DOI: 10.1109/TGRS.2010.2089799.

It's pretty simple to implement. Just use SHARP features.

Cheers

CR