Subject: BVLS (NNLS) without loops?
Posted by JP on Tue, 17 Dec 2013 06:32:00 GMT
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Hi IDLers,

I am currently using BVLS (http://www-astro.physics.ox.ac.uk/~mxc/idl/bvls.pro) for spectral unmixing. It works great, but, on one pixel at a time. I want to implement for many pixels without having to loop. Example below:

```
IDL>  help, a
A               FLOAT     = Array[85, 3]
IDL> help, b
B               FLOAT     = Array[85]
IDL> help, bnd
BND             FLOAT     = Array[2, 3]
IDL> print, bnd
     0.000000      1.00000
     0.000000      1.00000
     0.000000      1.00000


      bvls, A, B, BND, X_BVLS

IDL> help, x_bvls
X_BVLS          FLOAT     = Array[3]
```

in my example A is a vector of "endmembers" (85 spectral bands and 3 fractions), B is a pixel (vector of 85 bands), BND are bounds (don't go negative nor >1) and the X_BVLS are the estimated fractions returned for that pixel.
Now as you could imagine I have many many pixels (n) (my B is really a 2D array of [85, n]) and i've written a function which loops through n, but it gets very slow for large n.

Any ideas?

Thanks