Subject: Re: Is there a good procedure for Minimum Variance Analysis?
Posted by Wox on Tue, 29 Jan 2008 13:56:22 GMT

On Mon, 28 Jan 2008 17:54:58 -0800 (PST), "duxiyu@gmail.com"
<duxiyu@gmail.com> wrote:

> I want to perform the Minimum Variance Analysis on a set of magnetic
> field data.
> Is there a good procedure in IDL for this analysis?
>
> Best regards,
> Du

Don't know what it is, but in chapter 8 in this document
http://www.issibern.ch/PDF-Files/analysis_methods_1_1a.pdf
it looks like you have to make a (co)variance matrix from the X,Y and
Z components of the field data

```
      cov(X,X) cov(X,Y) cov(X,Z)
M=   cov(Y,X) cov(Y,Y) cov(Y,Z)
      cov(Z,X) cov(Z,Y) cov(Z,Z)
```

Then get the eigenvectors with trired/triql (because M is symmetric).
The eigenvector with the smallest eigenvalue is the boundary normal.