Subject: Re: Need help with an Iterative solution in IDL (relative newb question)
Posted by mbweller on Thu, 14 Aug 2008 19:56:43 GMT
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On Aug 14, 11:50 am, Brian Larsen <balar...@gmail.com> wrote:
> Matt,
>
> this isn't anywhere near enough information to provide a coherent and
> meaningful answer.
>
> - What exactly are you trying to do?
> - What have you tried?
> - What bits of code are working and not?
>
> Cheers,
>
> Brian
>
> ---------- ----------
> Brian Larsen
> Boston University
> Center for Space Physicshttp://people.bu.edu/balarsen/Home/IDL

Guess I should be more specific then :)

Here is my code (non iterative):
a= 3.6e007 ; area of region in meters^2
o= (60*!pi/180) ; fault dip angle in degrees
c= 6e-003 ; scaling factor
t= 50e003 ; elastic lithosphere thickness in meters
v= (a*t) ; volume of region in meters^3
x= 5e003 ; depth of faulting in meters, 5-7km for normal
faults, ~30km for thrust faults

h= (x/sin(o)) ; depth of faulting in meters
u= 3 ; fault aspect ratio: Length/Height(down dip)
= 2 or 3
kns=(sin(o)*cos(o)/v) ; horizontal normal strain constant for small
faults
knl=(c*cos(o)*x^2/v/sin(o)) ; horizontal normal strain
constant for large faults
kvs=(-sin(o)*cos(o)/v) ; vertical normal strain constant for small
faults
kvl=(-cos(o)/v) ; vertical normal strain constant for large
faults

ind_small = where(ar_plan[1,*] lt 2*x) ; select faults such that L

```
< 2x
ind_large = where(ar_plan[1,*] ge 2*x)    ; select faults such that L
>  2x
ar_plan_small = ar_plan[*,ind_small]       ; place in matrice with
identifer
ar_plan_large = ar_plan[*,ind_large]       ; place in matrice with
identifer
lc_small= ar_plan_small[1,*]          ; select only lengths to sum for
small faults
lc_large= ar_plan_large[1,*]          ; select only lengths to sum for
large faults
tl_small = total(lc_small^3)         ; sum lengths according to
kostrov summation, small faults
tl_large = total(lc_large)          ; sum lengths according to kostrov
summation, large faults


ens= (kns*c/u)*tl_small                  ; horizontal normal strain
for small faults
enl=  knl*tl_large              ; horizontal normal strain for large
faults
e_t= ens+enl                ; total horizontal normal strain
```

I need to vary the parameters o,c,t,x and u with in a certain range (e.g. o= 50-80 degrees) in order to reproduce e_t (total horizontal normal strain) to within ~ +-10% and I need all the possible combintation saved to an ascii file, or some other output. Where ar_plan is a FLOAT = Array[2, 129], different arrays have different dimensions and I have multiple arrays, but # of columns [2] should remain constant at this stage.

I'm having some trouble getting started, but will probably have some issues in the implementation as well :)

As an aside, I have another issue where, for example, ind_small = -1 for no returned results instead of 0. This causes:
% Attempt to subscript AR_PLAN with IND_SMALL is out of range and the program stops running.
I would like this to run even with no returned results. Does anyone know how to do this?

~Matt