
Subject: Re: 3D phase diagram drawing
Posted by [Wox](#) on Tue, 02 Sep 2008 09:23:55 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Mon, 1 Sep 2008 10:48:26 -0700 (PDT), rincvent@gmail.com wrote:

> Hi,
>
> I'm looking for a way to draw some diagram like that one:
> <http://www.geology.iastate.edu/gccourse/hydro/aspects/images/diagram.gif>
>
> My data would come as points organised in "1d sequences" (obtained
> from a numerical code with incrementation of one parameter), from
> which I would like to extrapolate some surfaces to separate various
> domains (so something really close to the figure given as a link). I
> tried to look whether someone already did that on IDL but didn't find
> anything.
>
> Any advice will be greatly appreciated, even if it were to give me the
> name of some other software that would be better for that job (free
> would be better of course).
>
> Thanks.

The code bellow will give you something to start with. Check also
PLOT_3DBOX. I seem to remember there was also something in the IDL
demo (itools?) what looks like this....

```
; Make data
n=100
m=2.
X=indgen(n)-n/2.
Y=X
Z=DIST(n)
YZ=max(Z,dim=1)
XZ=max(Z,dim=2)

; Set 3D
device,decompose=0
loadct,39
pos=[0.25, 0.25, 0.75, 0.75]
surface,Z,X,Y,/save,/nodata,xstyle=5,ystyle=5,zstyle=5,/norm al,pos=pos

; XZ-plane
PolyFill, [!X.Crange[0], !X.Crange, !X.Crange[1]], $
Replicate(m*!Y.Crange[1],4),[!Z.Crange, !Z.Crange[1]], $
!Z.Crange[0]],/T3D,color=50
```

```

Axis, !X.Crange[0], m*!Y.Crange[1], !Z.Crange[0], /XAXIS,
/T3D,charsize=1.5
Axis, !X.Crange[0], m*!Y.Crange[1], !Z.Crange[0], /ZAXIS,
/T3D,charsize=1.5
plots,!X.Crange[[0,0]],!Y.Crange[1],m*!Y.Crange[1],!Z.Crange[[0,0]],linestyle=4,/T3D
plots,!X.Crange[[1,1]],!Y.Crange[1],m*!Y.Crange[1],!Z.Crange[[0,0]],linestyle=4,/T3D
Plots, X, replicate(m*!Y.Crange[1],n), XZ, /T3D,linestyle=0

; YZ-plane
PolyFill, Replicate(m*!X.Crange[1],4), $
[!Y.Crange, !Y.Crange[1], !Y.Crange[0]],$
[!Z.Crange[0], !Z.Crange, !Z.Crange[1]],$
/T3D, COLOR=50
Axis, m*!X.Crange[1], !Y.Crange[1], !Z.Crange[0], /YAXIS,
/T3D,charsize=1.5
Axis, m*!X.Crange[1], !Y.Crange[1], !Z.Crange[0], /ZAXIS,
/T3D,charsize=1.5
plots,!X.Crange[1],m*!X.Crange[1],!Y.Crange[[0,0]],!Z.Crange[[0,0]],linestyle=4,/T3D
plots,!X.Crange[1],m*!X.Crange[1],!Y.Crange[[1,1]],!Z.Crange[[0,0]],linestyle=4,/T3D
Plots, replicate(m*!X.Crange[1],n), Y, YZ, /T3D,linestyle=0

; Plot surface
surface,Z,X,Y,/noerase,xstyle=5,ystyle=5,zstyle=5,/normal,position=pos,SKIRT=0

; Line on surface
Plots, X, replicate(Y[n/3],n), Z[n/3,*],
/T3D,linestyle=0,color=250,symsize=10

```
