Petrophysics software presently available Unicef CAREWARE

https://gm.umontpellier.fr/recherche/logiciels-scientifiques/petrofabrics/

https://www.gm.umontpellier.fr/en/research/scientific-softwares/petrofabrics/

from David Mainprice

for Mac and Windows

(All Mac programs recompiled for OS 10.8 25/10/2012)

All programs have a simple question and answer interface (no graphical user interface with pull down menus) and are intended to produce publication or presentation ready graphics in Adobe Illustrator postscript.

These are core programs of Petrophysics software package, there many others ……

Pole figure plotting program for individual orientation data in Euler angle triplets

"PF_Euler" - general purpose program for Euler angle triplets
In the following formats ;
-1= Channel+ v5.0 (.txt files only,NOT *.CTF)'*
0= Channel+ v3 & 4 and earlier (.txt files only)'*
1= phi1,phi,phi2'
2= no,phi1,phi,phi2'
3= phi1,phi,phi2,weight'
4= no,phi1,phi,phi2,weight'
5= VPSC program phi1,phi,phi2 etc'
6= VPSC6/7 TEX_PHI.OUT phi1,phi,phi2'
*7= BearTex *.CWT'*
*8= TSL-ETH *.ANG'*

*9= TSL-Strasbourg *.txt phi1,PHI,phi2,phase number'*

"PFctf" - for Oxford/HKL Channel 5 ASCII text export file (*.ctf)
Generates contoured pole figures as Adobe illustrator PostScript files from files of Bunge Euler angles: phi1, PHI, phi2 (also written as psi1, phi, psi2 after a paper by M.Casey 1981 Tectonophysics,78: 51-64) including EBSD Channel+ (.txt) format ASCII.*
One can choose up to 9 pole figures of any direction [UVW] or pole (HKL).
Plots can either be :
i) contours
ii) contours plus colour scaled (linear, log or inverse log) background according to the density. Colour scale options are black-white, red-blue, magenta-cyan, rainbow (red-yellow-green-blue) and hot metal (yellow-red-black).
iii) points.Points may be colour scaled using the Euler angle triplets to derive Red Blue Green (RGB) or Cyan Magenta Yellow (CMY) colours.

The orientation statistics best axis, best plane normal, eigenvectors, eigenvalues and mean orientation can be calculated and plotted on pole figures.

Seismic and elastic tensor properties for individual orientation data in Euler angle triplets

Based on: Mainprice D. (1990). An efficient Fortran program to calculate seismic anisotropy from the lattice preferred orientation of minerals. Computers & Geosciences,16,385-393.
Now with some added features:
i) Voigt, Hill, Reuss and geometric mean averages (recommended default the Voigt-Reuss-Hill average, sometimes called the Hill average)
ii) calculates phase and group velocites.
iii) graphics files

"Anis_Euler" - data in Euler angle triplets
In the same formats as PF_Euler (see above)
"ANIS_ctf" - for Oxford/HKL Channel 5 ASCII text export file (*.ctf)

Pole figure plotting program of seismic properties for Mac and PC - "Poly_Adobe"

Produces postscript files of contoured Vp,Vs1,Vs2,dVs,Vp/Vs1,Vp/Vs2, polarization etc. form output files from Anis_Euler and ANIS_ctf from polycrystalline samples. Plots can either be :
i) contours
ii) contours plus colour scaled (linear, log or inverse log) background according to the velocity or anisotropy in a given propagation direction. Colour scale options are black-white, red-blue, magenta-cyan, rainbow (red-yellow-green-blue) and hot metal (yellow-red-black).

VRH program for calculating isotropic seismic properties form the elastic tensor of a single crystal or polycrystalline sample

Calculates the isotropic averages Voigt, Reuss, VRH (Hill) and their corresponding Vp, Vs, Vp/Vs, bulk modulus (K), shear modulus (G), Young's modulus (E), Poisson's ratio and the isotropic elastic tensor with C11,C12 and C44.
Input Cij tensor (Megabars) and density (g/cm3)

Second order symmetric tensor properties (e.g.thermal diffusivity) for individual orientation data

"T2_Euler" - data in Euler angle triplets
In the same formats as PF_Euler (see above)
"T2_ctf" - for Oxford/HKL Channel 5 ASCII text export file (*.ctf)

Pole figure plotting program of 2nd order tensor properties for Mac and Windows - "T2Adobe"

Produces postscript files of contoured each average and principle eigenvalues, etc. form output files from T2 and T2ch5. Plots can either be :
i) contours
ii) contours plus colour scaled (linear, log or inverse log) background according to the Tensor value in a given direction. Colour scale options are black-white, red-blue, magenta-cyan, rainbow (red-yellow-green-blue) and hot metal (yellow-red-black).

Pole figure plotting program for individual field data

"Field2k" or "PF-Field2"- general purpose programs

Generates contoured pole figures as Adobe illustrator PostScript files from files of Field work data in the following formats :
1 = Dip direction,Dip (0-360,0-90)
2 = Azimuth,dip,dip direction with code for dip direction:0(East)1(West)
3 = Euler angles (phi1,phi,phi2) of poles planar data (az=90-phi1,inc=90-phi)
Plots can either be :
i) contours
ii) contours plus colour scaled (linear, log or inverse log) background according to the density. Colour scale options are black-white, red-blue, magenta-cyan, rainbow (red-yellow-green-blue) and hot metal (yellow-red-black).
iii) points.Points may be colour scaled using the Euler angle triplets to derive Red Blue Green (RGB) or Cyan Magenta Yellow (CMY) colours.

The orientation statistics best axis, best plane normal, eigenvectors, eigenvalues and mean orientation can be calculated and plotted on pole figures.

last updated 25/10/2012