

$$M = \begin{bmatrix} 6 & 0 & 0 \\ 0 & -6 & 0 \\ 0 & 0 & 3 \end{bmatrix}$$

$$a) \quad M_0 = \frac{1}{\sqrt{2}} \left(\sum_{ij} M_{ij}^2 \right)^{\frac{1}{2}}$$

$$\begin{aligned} M_0 &= \frac{1}{\sqrt{2}} \left(6^2 + (-6)^2 + 3^2 \right)^{\frac{1}{2}} \\ &= \frac{(6^2 + 3^2)^{\frac{1}{2}}}{\sqrt{2}} = 25.5441 \end{aligned}$$

$$b) \quad M^0 = \frac{1}{3} (\text{tr } M) I$$

$$M^0 = \frac{1}{3} (6 + -6 + 3) I$$

$$= \frac{1}{3} (3) I = I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$M^0_0 = \frac{1}{\sqrt{2}}$$

$$M' = M - M^0$$

$$= \begin{bmatrix} 6 & 0 & 0 \\ 0 & -6 & 0 \\ 0 & 0 & 3 \end{bmatrix} - \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} 5 & 0 & 0 \\ 0 & -7 & 0 \\ 0 & 0 & 2 \end{bmatrix}$$

Rotate:

$$M' = \begin{bmatrix} 5 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & -7 \end{bmatrix}$$

$$M^{DC} = \begin{bmatrix} \frac{1}{2}(5-7) & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & -\frac{1}{2}(5-7) \end{bmatrix} = \begin{bmatrix} -1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$M^{DC}_0 = \frac{(6^2 + (-6)^2)^{\frac{1}{2}}}{\sqrt{2}} = 6$$

$$M^{\text{CLVD}} = \begin{bmatrix} -\frac{2}{2} & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & -\frac{2}{2} \end{bmatrix} = \begin{bmatrix} -1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & -1 \end{bmatrix}$$

$$M_0^{\text{CLVD}} = \frac{(-1^2 + 2^2 + -1^2)^{\frac{1}{2}}}{\sqrt{2}} = \frac{\sqrt{6}}{\sqrt{2}} = \sqrt{3}$$

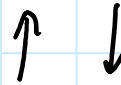
$$\epsilon = \frac{\sigma_2}{\max(|\sigma_1|, |\sigma_3|)} = \frac{2}{7}$$

9.3

Sunday, March 9, 2014 17:03



ΔPFO



ΔPFO

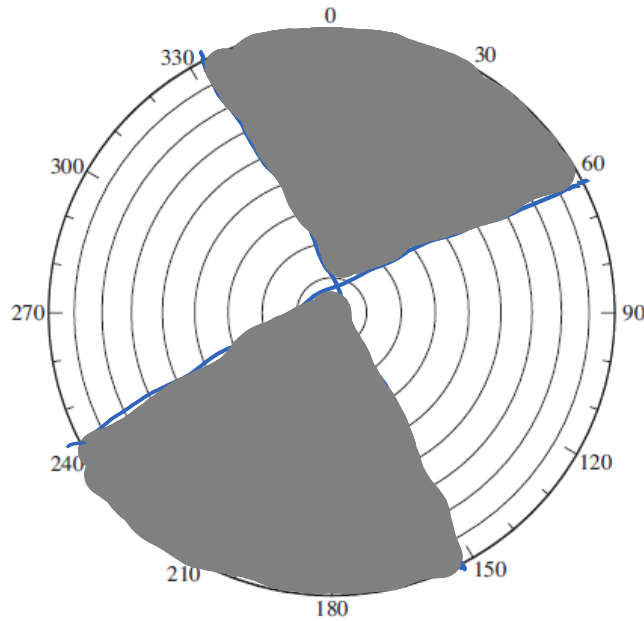
The first P -wave motion @ PFO will be downward.

9.6

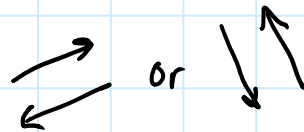
Sunday, March 9, 2014

17:10

Luzon 1990:

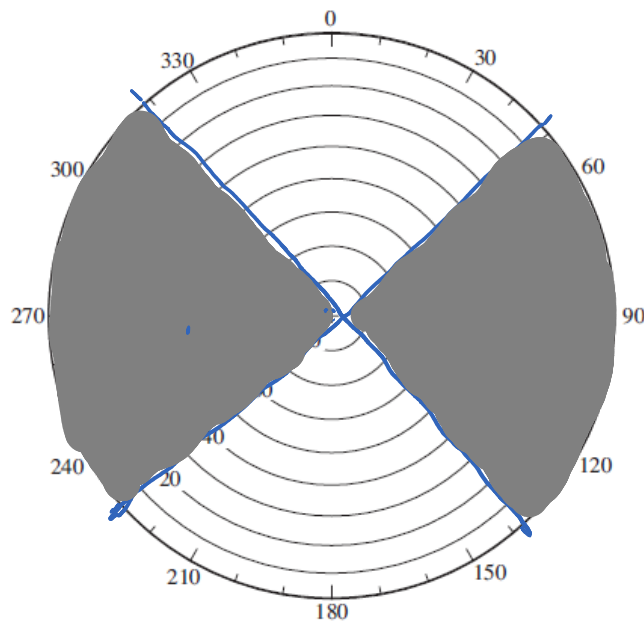


Strike-slip

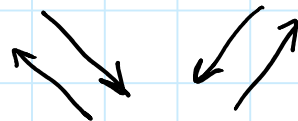


Landreus 1992:

3.8
4.8



Strike-slip



9.6 (continued)

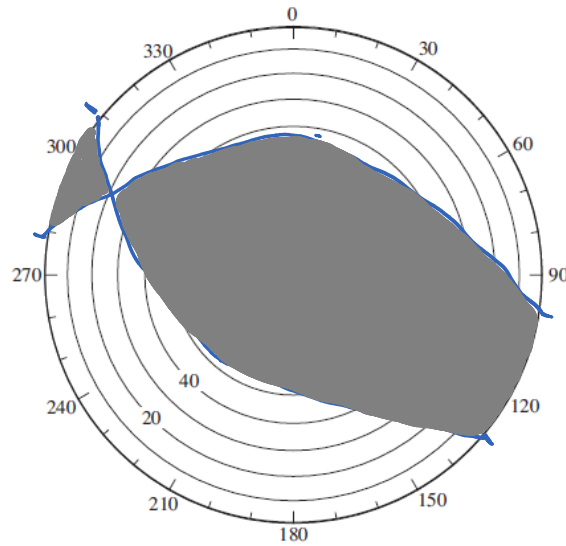
Tuesday, March 11, 2014

16:13

Northridge
1994

278

130

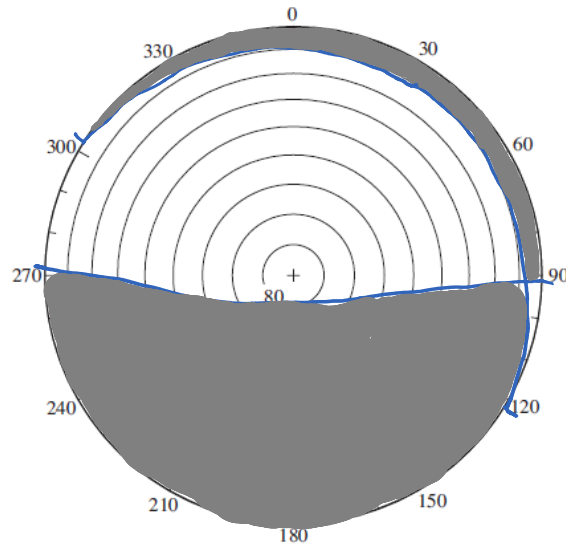


Oblique

Bolivia 1994

302 10 -60

92 81 -95

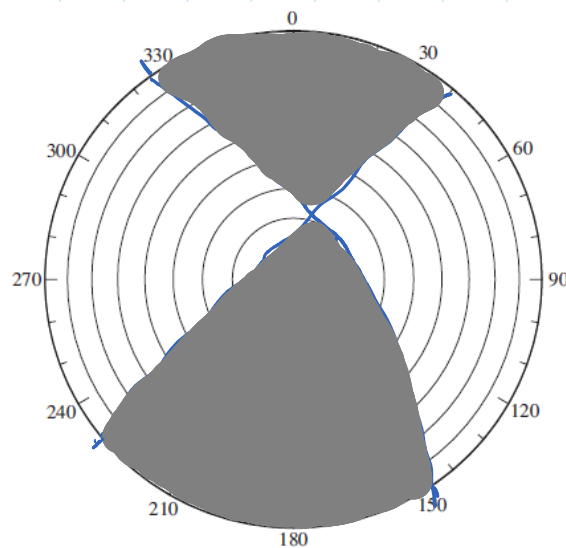


Normal
(but a little oblique)

Kobe 1995

324 70 12

230 79 160



Strike-slip

