Mecanismo Focal de Exibição

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20 de julho de 2021

Para o tensor de momento

$$
\begin{aligned}
M_{pq} * G_{np,q} = & \left(\frac{15\gamma_n\gamma_p\gamma_q - 3\gamma_n\delta_{pq} - 3\gamma_p\delta_{nq} - 3\gamma_q\delta_{np}}{4\pi\rho} \right) \frac{1}{r^4} \int_{r/\alpha}^{r/\beta} \tau M_{pq}(t-\tau) d\tau \\
& + \left(\frac{6\gamma_n\gamma_p\gamma_q - \gamma_n\delta_{pq} - \gamma_p\delta_{nq} - \gamma_q\delta_{np}}{4\pi\rho\alpha^2} \right) \frac{1}{r^2} M_{pq}\left(t - \frac{r}{\alpha}\right) \\
& - \left(\frac{6\gamma_n\gamma_p\gamma_q - \gamma_n\delta_{pq} - \gamma_p\delta_{nq} - \gamma_q\delta_{np}}{4\pi\rho\beta^2} \right) \frac{1}{r^2} M_{pq}\left(t - \frac{r}{\beta}\right) \\
& + \frac{\gamma_n\gamma_p\gamma_q}{4\pi\alpha^3} \frac{1}{r} \dot{M}_{pq}\left(t - \frac{r}{\alpha}\right) - \left(\frac{\gamma_n\gamma_p - \delta_{np}}{4\pi\beta^3} \right) \gamma_q \frac{1}{r} \dot{M}_{pq}\left(t - \frac{r}{\beta}\right)
\end{aligned}
$$

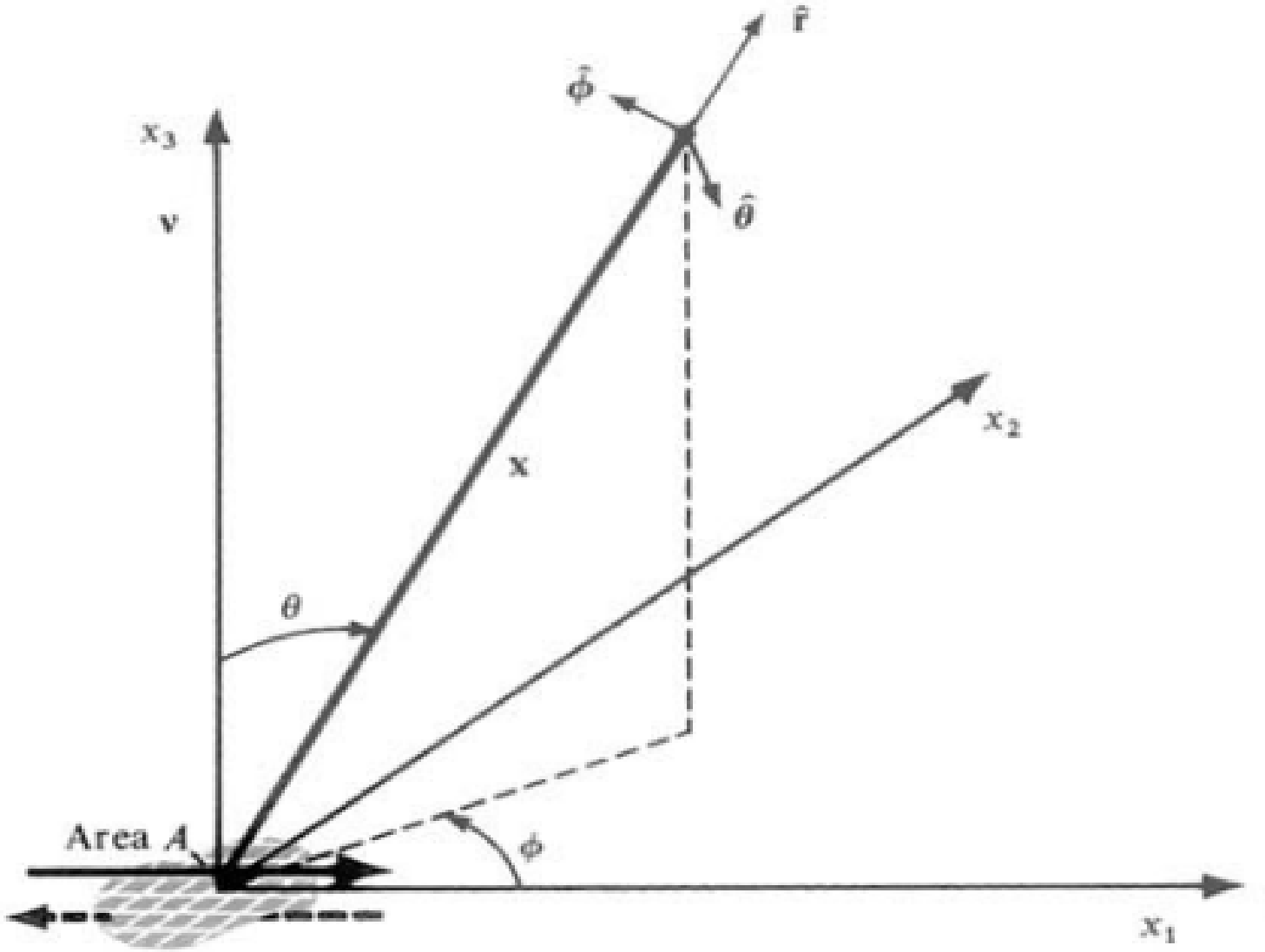
Deslocamento de cisalhamento

$$\begin{aligned}\mu(\bar{u}_p v_q + \bar{u}_q v_p) A * G_{np,q} &= R_1 \mu A \int_{r/\alpha}^{r/\beta} \tau \bar{u}_p v(t-\tau) d\tau \\ &+ R_2 \mu A \bar{u}_p \left(t - \frac{r}{\alpha}\right) \\ &- R_3 \mu A \bar{u}_p \left(t - \frac{r}{\beta}\right) \\ &+ R_4 \mu A \dot{\bar{u}}_p \left(t - \frac{r}{\alpha}\right) - R_5 \mu A \dot{u} b_p \left(t - \frac{r}{\beta}\right)\end{aligned}$$

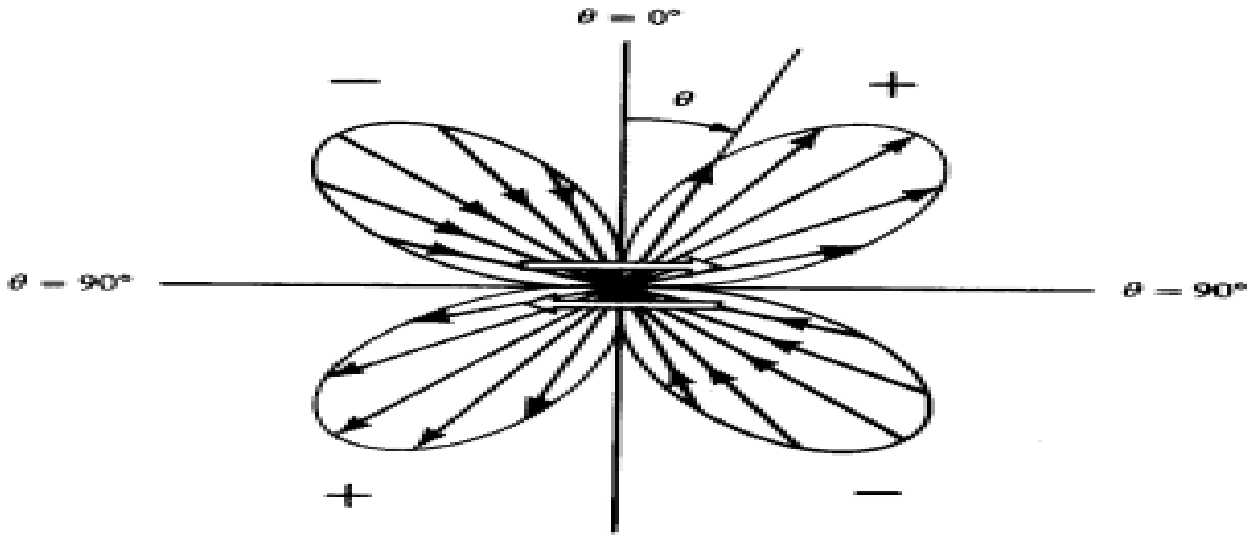
Deslocamento de cisalhamento

$$
\begin{aligned}
R_1 &= \frac{30\gamma_n\gamma_p\gamma_q v_q - 6v_n\gamma_p - 6\delta_{np}\gamma_q v_q}{4\pi\rho r^4} \\
R_2 &= \frac{12\gamma_n\gamma_p\gamma_q v_q - 2v_n\gamma_p - \delta_{np}\gamma_q v_q}{4\pi\rho\alpha^2 r^2} \\
R_3 &= \frac{12\gamma_n\gamma_p\gamma_q v_q - 3v_n\gamma_p - 3\delta_{np}\gamma_q v_q}{4\pi\rho\beta^2 r^2} \\
R_4 &= \frac{2\gamma_n\gamma_p\gamma_q v_q}{4\pi\rho\alpha^3 r} \\
R_5 &= \frac{2\gamma_n\gamma_p\gamma_q v_q - v_n\gamma_p - \delta_{np}\gamma_q v_q}{4\pi\rho\beta^3 r}
\end{aligned}
$$

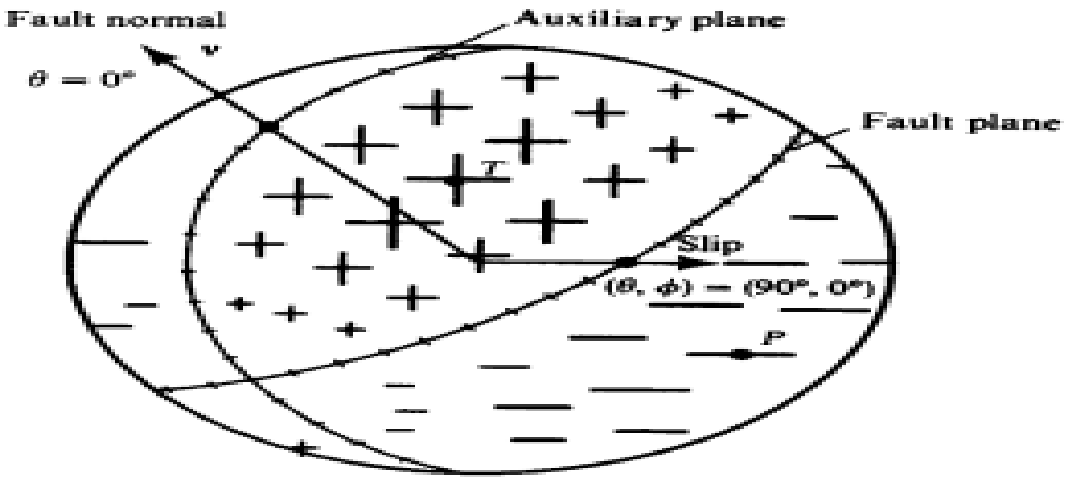
$\phi = 0$



$\phi = 0$

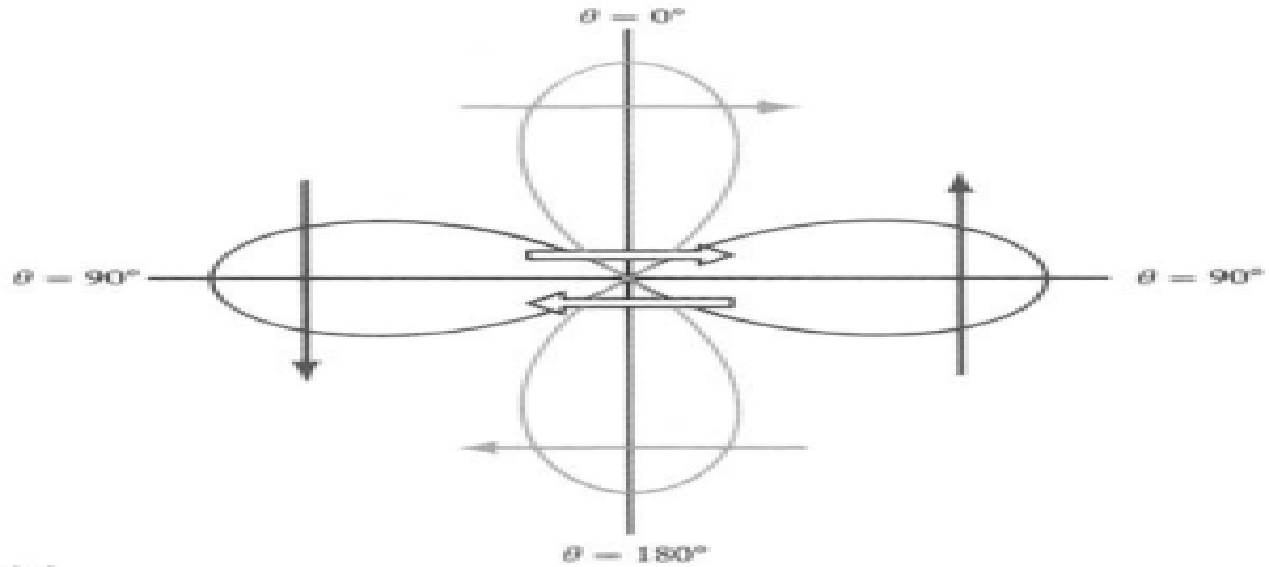

θ = 0°
θ
θ = 90°
θ = 90°
θ = 180°

(a)

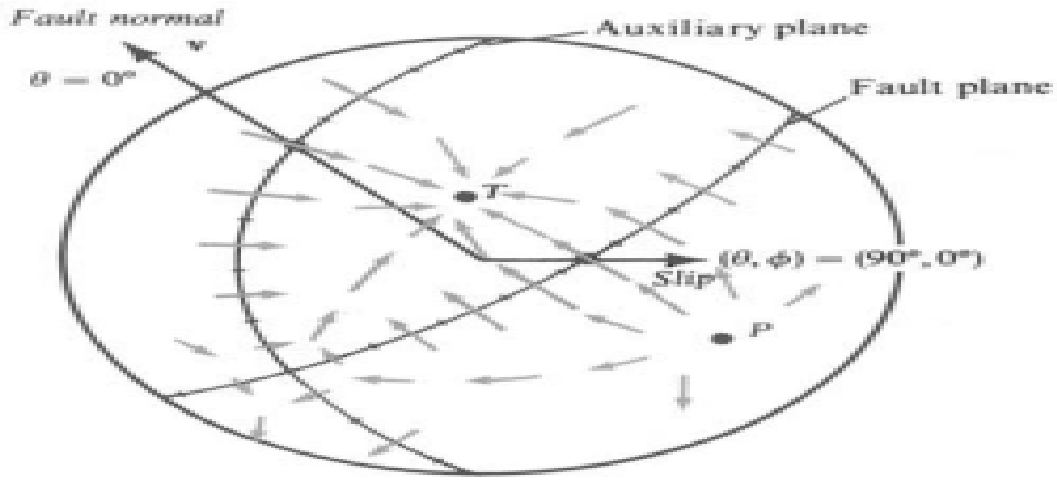

Fault normal
ν
θ = 0°
Auxiliary plane
Fault plane
T
Slip
(θ, φ) = (90°, 0°)
P

(b)

$\phi = 0$


θ = 0°
θ = 90°
θ = 90°
θ = 180°

(a)


Fault normal
Auxiliary plane
θ = 0°
Fault plane
T
(θ, φ) = (90°, 0°)
Slip
P

(b)

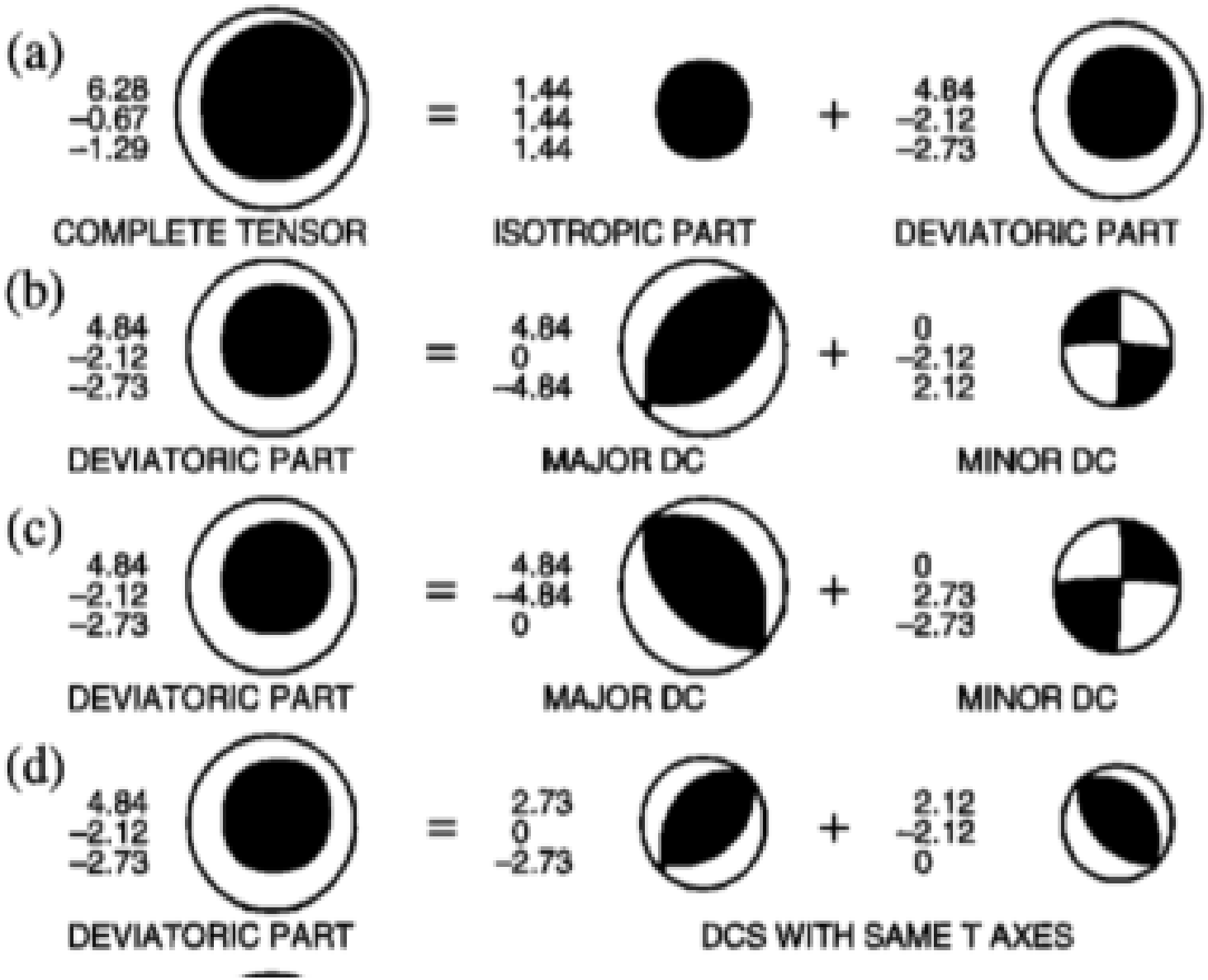
Deslocamento de cisalhamento

$$
\begin{aligned}
\boldsymbol{u}(\boldsymbol{x},t) \quad = \quad & \frac{1}{4\pi\rho}\boldsymbol{A}^{N}\frac{1}{r^4}\int_{r/\alpha}^{r/\beta}\tau M_0(t-\tau)d\tau \\
& + \frac{1}{4\pi\rho\alpha^2}\boldsymbol{A}^{IP}\frac{1}{r^2}M_0\left(t-\frac{r}{\alpha}\right) + \frac{1}{4\pi\rho\beta^2}\boldsymbol{A}^{IS}\frac{1}{r^2}M_0\left(t-\frac{r}{\beta}\right) \\
& + \frac{1}{4\pi\rho\alpha^3}\boldsymbol{A}^{FP}\frac{1}{r}\dot{M}_0\left(t-\frac{r}{\alpha}\right) + \frac{1}{4\pi\rho\beta^3}\boldsymbol{A}^{FS}\frac{1}{r}\dot{M}_0\left(t-\frac{r}{\beta}\right)
\end{aligned}
$$

$$
\begin{aligned}
\boldsymbol{A}^{N} &= 9\sin 2\theta\cos\phi\hat{\boldsymbol{r}} - 6(\cos 2\theta\cos\phi\hat{\boldsymbol{\theta}} - \cos\theta\sin\phi\hat{\boldsymbol{\phi}}) \\
\boldsymbol{A}^{IP} &= 4\sin 2\theta\cos\phi\hat{\boldsymbol{r}} - 2(\cos 2\theta\cos\phi\hat{\boldsymbol{\theta}} - \cos\theta\sin\phi\hat{\boldsymbol{\phi}}) \\
\boldsymbol{A}^{IS} &= -3\sin 2\theta\cos\phi\hat{\boldsymbol{r}} + 3(\cos 2\theta\cos\phi\hat{\boldsymbol{\theta}} - \cos\theta\sin\phi\hat{\boldsymbol{\phi}}) \\
\boldsymbol{A}^{FP} &= \sin 2\theta\cos\phi\hat{\boldsymbol{r}} \\
\boldsymbol{A}^{FS} &= \cos 2\theta\cos\phi\hat{\boldsymbol{\theta}} - \cos\theta\sin\phi\hat{\boldsymbol{\phi}}
\end{aligned}
$$

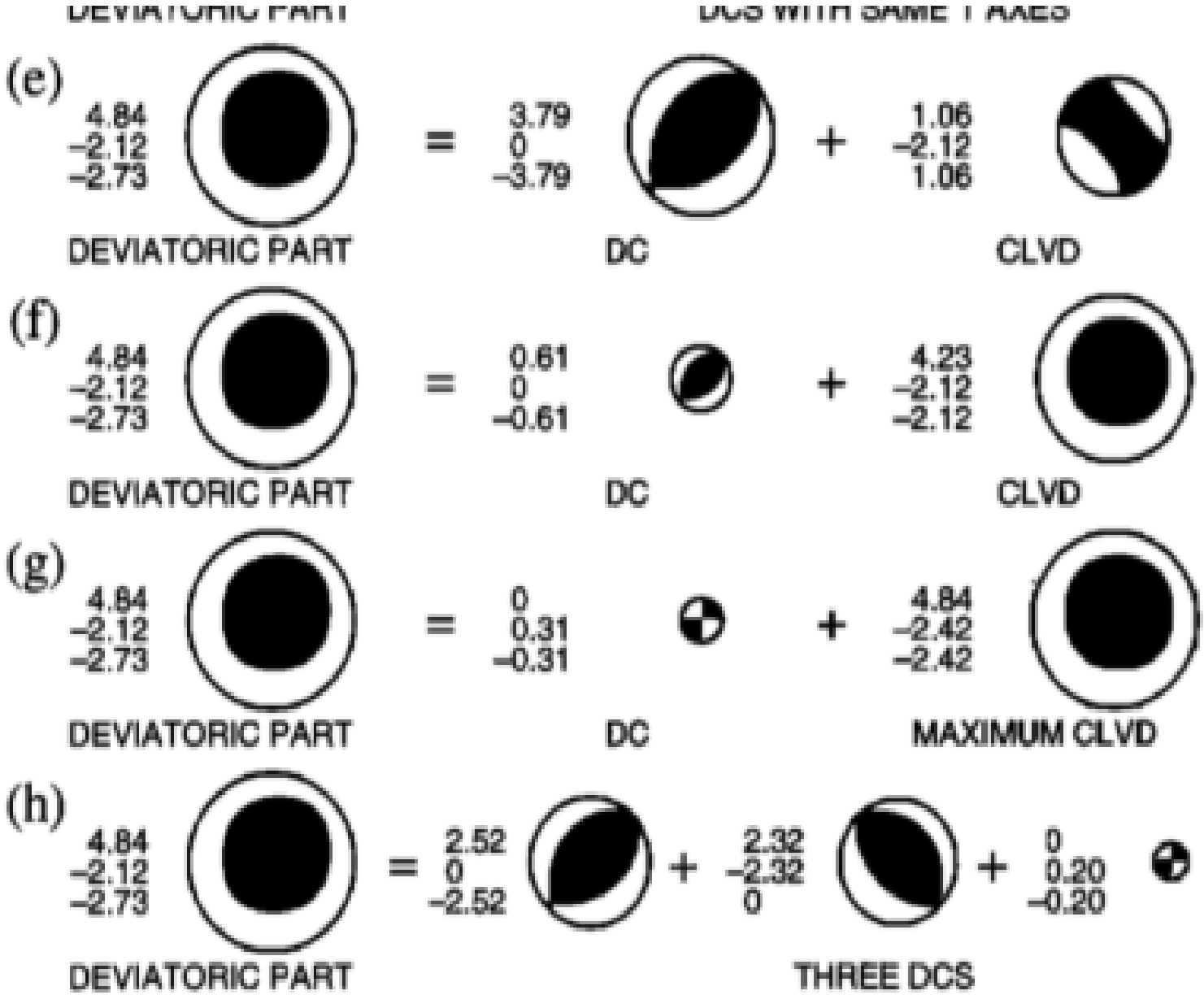
$$\boldsymbol{u}(\boldsymbol{x},\infty) = \frac{M_0(\infty)}{4\pi\rho r^2}\boldsymbol{A}^N\left[\left(\frac{1}{2\beta^2}-\frac{1}{2\alpha^2}\right)+\frac{\boldsymbol{A}^{IP}}{\alpha^2}+\frac{\boldsymbol{A}^{IS}}{\beta^2}\right]$$

$\phi = 0$


(a)
6.28
–0.67
–1.29
=
1.44
1.44
1.44
+
4.84
–2.12
–2.73
COMPLETE TENSOR
ISOTROPIC PART
DEVIATORIC PART
(b)
4.84
–2.12
–2.73
=
4.84
0
–4.84
+
0
–2.12
2.12
DEVIATORIC PART
MAJOR DC
MINOR DC
(c)
4.84
–2.12
–2.73
=
4.84
–4.84
0
+
0
2.73
–2.73
DEVIATORIC PART
MAJOR DC
MINOR DC
(d)
4.84
–2.12
–2.73
=
2.73
0
–2.73
+
2.12
–2.12
0
DEVIATORIC PART
DCS WITH SAME T AXES

Data source	Amplitude magnitude	Moment*	Moment magnitude
Surface waves	7.6	1.1	7.3
Body waves		0.8	7.3
Geologic moment†		0.9	7.3
Geodetic moment (37)		1.0	7.3
Local seismograms	6.8	1.0	7.3‡

$\phi = 0$


(e)
4.84
−2.12
−2.73
=
3.79
0
−3.79
+
1.06
−2.12
1.06
DEVIATORIC PART
DC
CLVD
(f)
4.84
−2.12
−2.73
=
0.61
0
−0.61
+
4.23
−2.12
−2.12
DEVIATORIC PART
DC
CLVD
(g)
4.84
−2.12
−2.73
=
0
0.31
−0.31
+
4.84
−2.42
−2.42
DEVIATORIC PART
DC
MAXIMUM CLVD
(h)
4.84
−2.12
−2.73
=
2.52
0
−2.52
+
2.32
−2.32
0
+
0
0.20
−0.20
DEVIATORIC PART
THREE DCS