SCREW DISLOCATION:

$$\boldsymbol{\sigma}_{xyz}^{(s)} = \begin{bmatrix} 0 & 0 & \tau_{xz} \\ 0 & 0 & \tau_{yz} \\ \tau_{xz} & \tau_{yz} & 0 \end{bmatrix} \tag{6.39b}$$

where

$$\tau_{xz} = G\gamma_{xz} = -\frac{Gb}{2\pi}\frac{y}{x^2+y^2} \tag{6.40a}$$

$$\tau_{yz} = G\gamma_{yz} = \frac{Gb}{2\pi}\frac{x}{x^2+y^2} \tag{6.40b}$$

EDGE DISLOCATIONS:

$$\sigma_{xyz}^{(e)} = \begin{bmatrix} \sigma_{xx} & \tau_{xy} & 0 \\ \tau_{xy} & \sigma_{yy} & 0 \\ 0 & 0 & \sigma_{zz} \end{bmatrix} \tag{6.41}$$

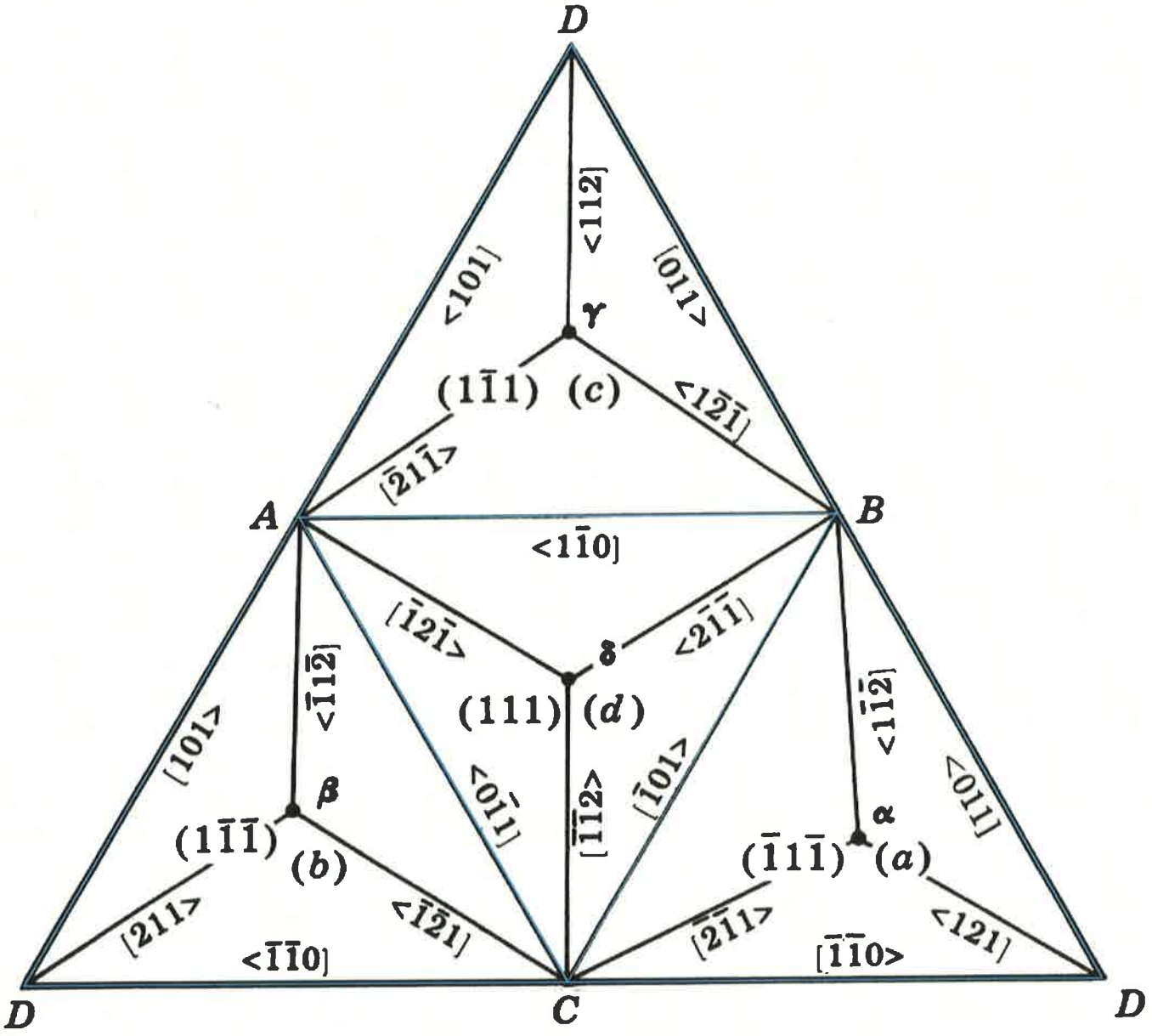
where

$$\sigma_{xx} = -\frac{Gb}{2\pi(1-\nu)}\frac{y\left(3x^2+y^2\right)}{\left(x^2+y^2\right)^2}$$

$$\sigma_{yy} = \frac{Gb}{2\pi(1-\nu)}\frac{y\left(x^2-y^2\right)}{\left(x^2+y^2\right)^2}$$

$$\sigma_{zz} = \nu\left(\sigma_{xx}+\sigma_{yy}\right)$$

$$\sigma_{xy} \equiv \tau_{xy} = \frac{Gb}{2\pi(1-\nu)}\frac{x\left(x^2-y^2\right)}{\left(x^2+y^2\right)^2}$$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