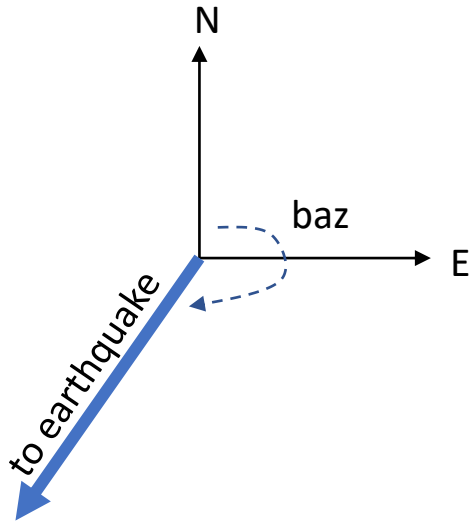
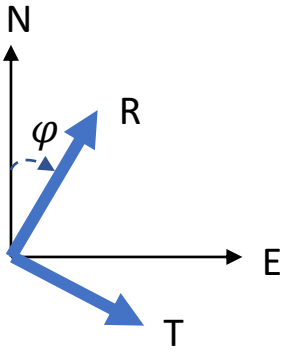
Single-layer Splitting – Revisited

William Menke, June 26, 2026

This note improves upon menke_research_note100.pdf by more consistent definition of angles.

Definition of radial and transverse





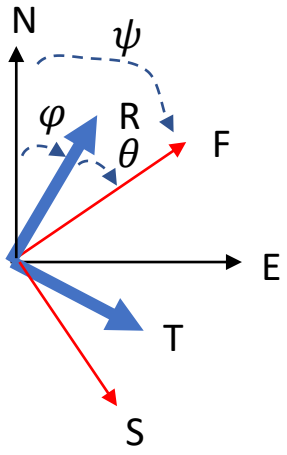
radial

$\varphi = (baz - 180)$

$$R = \cos(\varphi)\, N + \sin(\varphi) E \qquad N = \cos(\varphi)\, R - \sin(\varphi) T$$

$$T = -\sin(\varphi)\, N + \cos(\varphi) E \qquad E = \sin(\varphi)\, \mathrm{R} + \cos(\varphi) T$$

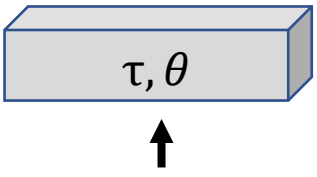
Single-Layer Splitting Calculation



$$F = \cos(\varphi)\, R + \sin(\varphi) T \qquad R = \cos(\varphi)\, F - \sin(\varphi) S$$

$$S = -\sin(\varphi)\, R + \cos(\varphi) T \qquad T = \sin(\varphi)\, \mathrm{F} + \cos(\varphi) S$$

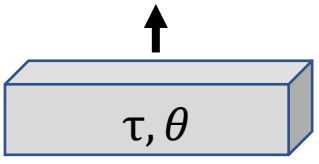
Bottom: $T = 0$



$$F = \cos(\varphi)\, R$$

$$S = -\sin(\varphi)\, R$$

Top: 0



$$F = \cos(\varphi)\, R$$

$$S = -\sin(\varphi)\, R(\tau)$$

Angle of fast axis from North

$\psi = \varphi + \theta$

$$R = \cos^2(\varphi) R + \sin^2(\varphi)\, R(\tau)$$

$$T = \sin(\varphi)\cos(\varphi)\, R - \cos(\varphi) S \cos(\varphi)\, R(\tau)$$