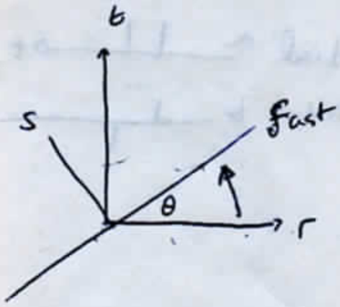
Anisotropy Operator for Simple Layer

MRN 114



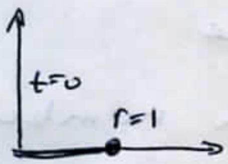
$$r = f\cos\theta - s\sin\theta$$

$$t = f\sin\theta + s\cos\theta$$

$$f = r\cos\theta + t\sin\theta$$

$$s = -r\sin\theta + t\cos\theta$$

bottom:

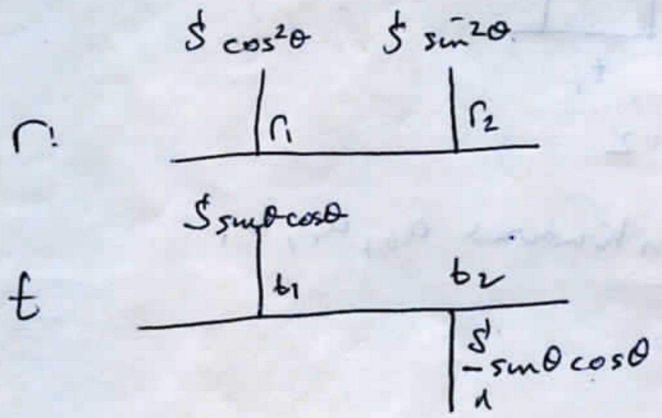


$$f = \cos\theta$$

$$s = -\sin\theta$$

top fast pulse: $r = \cos^2\theta \quad t = \sin\theta\cos\theta$

slow pulse $r = +\sin^2\theta \quad t = -\sin\theta\cos\theta$



$ = amp of incoming

$$\frac{t_1}{r_1} = \tan\theta = -\frac{r_2}{t_2}$$

2 constraints: tangential pulses equal and opposite $-t_1 = t_2$

~~radial pulses~~

$$t_1 = -t_2$$

$$t_1 t_2 = -r_1 r_2 \quad \text{or} \quad t_1^2 = r_1 r_2$$

suppose

$A(t) = s(t) * a(t)$

$B(t) = s(t) * b(t)$

anisotropy A = radial a

B = trans. b

then use

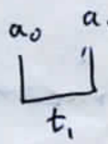
$A(t) * b(t) = B(t) * a(t)$

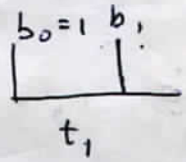
to solve for a, b in special case

That they consist of small number

of pulses.

can only find a, b up to scale factor.

$A *$ 

$= B *$ 

for fixed t_1 and pulses = 2

least-squares for 3-unknowns a_0, a_1, b_1

Then grid-search over t_1