$$D_{BULK} = D^{ol}(X_i^{ol} - Y^{ol}) + D^{opx}(X_i^{opx} - Y^{opx}) + D^{cpx}(X_i^{cpx} - Y^{cpx})$$

Case 2: $Y^{opx} = 0.06$ $Y^{ol} = 0$

$D_{BULK} = 0.049$

Note - very similar trace element composition in melt, even though case 2 melt major elements is entirely opx (decoupled major - trace)

Case 3: ← trace mineral

garnet in mantle or zircon in crust

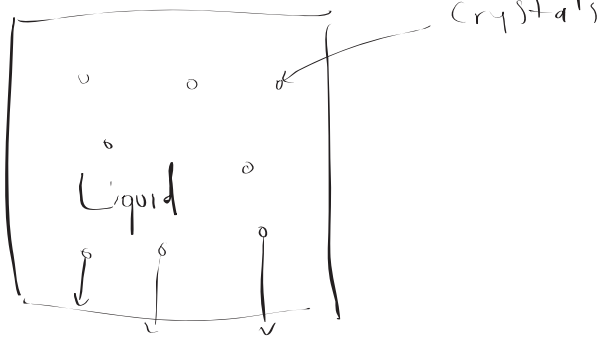
$X^{ol} = X^{opx} = 0.495$ $X^{min} = 0.01$

$D^{ol} = 0.01$ $D^{opx} = 0.1$ $D^{min} = \underline{\underline{10}}$ ← highly compatible

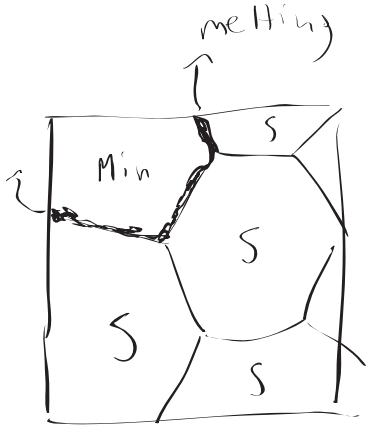
$Y^{ol} = Y^{min} = 0$ $Y^{opx} = 0.06$

What is D_{BULK}? $D_B = 0.148$ ← 3 times case 1 and 2

↳ minor mineral phases can be super important unless



open system



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