Q and A on 2nd take-home, v4

Q. In question 2, do you refer to the grain size as radius or diameter?

A. Diameter

Q. I have some questions about the equation to calculate the dislocation

density in slides 15 in lecture 18. I think there are some problems in this equation because the unit of dislocation density is m^-2 instead of m^-1. How should I interpret this?

A. Try looking at the notes for L2 about recrystallization for 27-301 from last Fall:

<http://pajarito.materials.cmu.edu/rollett/27301/27301.html>

I intended for you to use the most basic calculation of driving for recrystallization that does not involve low angle grain boundaries or the Read-Shockley model.

Q. Does the “orientation” in question 2B mean “misorientation” or just “orientation”?

A. Indeed, it really does mean orientation. If you dig through the lecture notes, you should be able to find the difference between computing misorientation from passive rotations (the standard approach in our work) versus active rotations.

Q. I have a doubt regarding Q5b). You have asked us to calculate the coordinates of the tensile axis position for the same SST in both cases. Is it a typo?

A. Indeed it is not a typo, I wrote it that way so that the answer for (A) would be relevant to (B).

Q. For Q2, you are asking that we "estimate the dislocation density that would balance out the curvature driving force." But I thought we should just use the Read-Shockley equation to solve the question. Is there any equation involving the curvature that's necessary for this problem?

A. This is only a question about (thermodynamic) driving force(s). Using the Read-Shockley model will only confuse you.

Q. In question4 we are asked what's the misorientation between A{0, 90, 45} and B{0, 51.1, 45} and where does the axes lie.

Do we need to find all the equivalent representation for this misorientation?

Or do we need to find the misorientation axis corresponding to the smallest misorientation angle?

A. Yes, this option. However, the hint is that you can almost do it by inspection of the two sets of Euler angles.

Or just deal with the axis find by matrix obtained as gB\*gA-1?