TAM 524- Micromechanics of Materials Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Homework #3 Due March 16, 2015

Using the self-consistent method (as given in Mura p.443) determine the stress-strain behavior of a material composed of fcc grains. Consider 5x5x5 crystals and choose the orientation angles such that two adjacent crystals can not have a misorientation exceeding 10°. Denote the critical resolved shear stress as o and assume perfect plasticity at the crystal level. Compare your results with that given by Mura for FCC crystals (using similar normalized plots as Fig 46.3, p.447).