

MSAE E4215 Homework #1

Yitian Wang

Columbia University
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- 1 1.1 in the notes
- 2 Estimate the yield strength for an absolutely perfect single crystal of Fe (and compare with the experimental value)
- 3 How is the yield strength defined, conventionally?
- 4 Brittle or ductile failure: what is better for a structural metal in tension, and why?
- 5 Why might you want to deform a metal plastically?
- 6 Examine the stress-strain curve of a perfect Fe whisker (in the presentation, or see notes.)
a) is it linearly elastic? b) is it elastic?