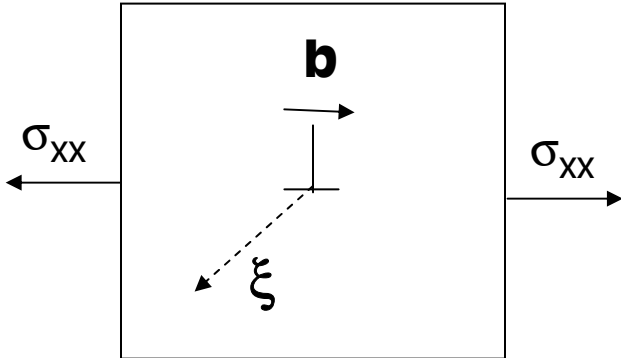


3.40J / 22.71J
Modern Physical Metallurgy
KJ Van Vliet and KC Russell

Lecture 7: Dislocation interactions II

March 2, 2004

Example of Peach-Koehler:

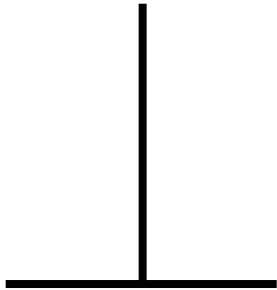


How does a dislocation move in the presence of a tensile stress σ_{xx} ?

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Self-stress effects in metals:

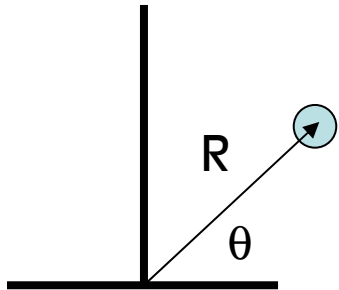
Cottrell-Bilby dislocation atmosphere



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Self-stress effects in metals:

Cottrell-Bilby dislocation atmosphere



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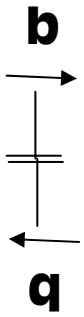
Self-stress effects in metals:

(1) Hydrogen embrittlement:

(2) Serrated yielding:

Interaction effects in metals:

1. Dislocation-dislocation

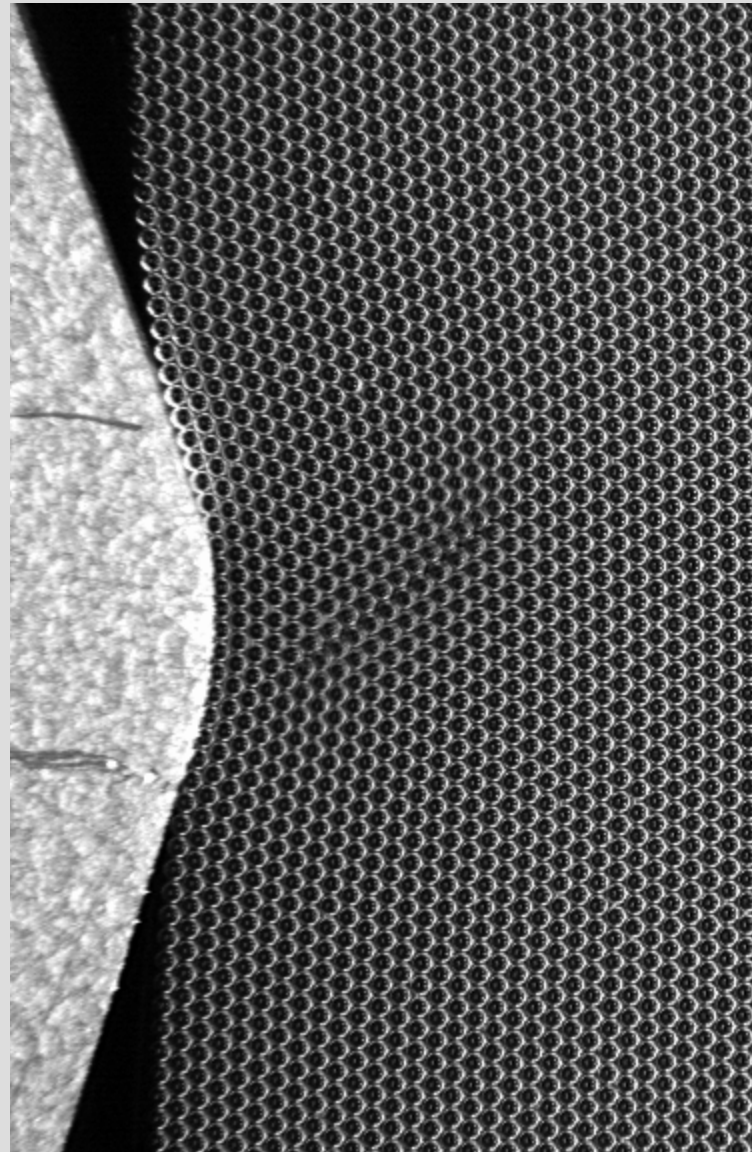


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Interaction effects in metals:

1. Dislocation-dislocation

INDENTER



BUBBLE RAFT =
FCC METAL

Interaction effects in metals:

2. Dislocation-surface

