

5. Dislocations

5.1 Basics

5.1.1 Burgers and Line Vector

5.1.2 Volterra Construction and Consequences

5.1.3 Essentials to Chapter 5.1: Dislocations - Basics

5.2 Elasticity Theory, Energy , and Forces

5.2.1 General Remarks and Basics of Elasticity Theory

5.2.2 Stress Field of a Straight Dislocation

5.2.3 Energy of a Dislocation

5.2.4 Forces on Dislocations

5.2.5 Interactions Between Dislocations

5.2.6 Essentials to 5.2: Dislocations - Elasticity Theory, Energy , and Forces

5.3 Movement and Generation of Dislocations

5.3.1 Kinks and Jogs

5.3.2 Generation of Dislocations

5.3.3 Climb of Dislocations

5.3.4 Essentials to 5.3: Movement and Generation of Dislocations

5.4 Partial Dislocations and Stacking Faults

5.4.1 Stacking Faults and Close Packed Lattices

5.4.2 Dislocation Reactions Involving Partial Dislocations

5.4.3 Some Dislocation Details for Specific Lattices

5.4.4 Essentials to 5.4 Partial Dislocations and Stacking Faults