Forces between Edge Dislocations

Illustration

Shown is the force between edge dislocations of identical and opposite Burgers vectors as a function of their normalized distance.

- The distance ***x*** between the dislocations is expressed in units of ***y***, the distance of the glide planes.
- The force changes from repulsive to attractive or vice verse for a distance ***x* = *y***; i.e. if the dislocations are at an angle of **45^{o}** relative to the glide plane.
- The **45^{o}** position is a stable equilibrium position for opposite Burgers vectors, because at this position ***F* = 0**, *and* **d*F*/d*x* < 0**.
- For dislocations with identical ***b*** vectors, the stable position is at ***x* = 0**.