## **Dislocation Science**



When you first encounter crystal lattice defects, the one-dimensional **dislocations** are the most difficult ones to imagine. True, the ubiquitous schematic picture of an <u>edge dislocation</u> is not all that hard to grasp, but everything beyond that gets a bit mind boggling at first.

In contrast, all the other defects- vacancies and interstitials, grain boundaries or precipitates - are far easier to imagine. In reality, all defects hang together; they do not exist in splendid isolation. Dislocations and their interaction with all other defects are central to metallurgy and that's why I will devote several modules to this topic.

- **1.** <u>The Basics</u>, including Volterra's knife and a few equations.
- 2. <u>The Reality</u>. All the rather weird stuff real dislocations do.
- 3. <u>Specialties</u>. How dislocations reproduce and so on.

You may a so want to check these modules

History of dislocations Who invented (or discovered?) dislocations?

<u>Creep</u> and <u>Fatigue</u>, where creepy or tired dislocations cause big problems.