Mechanical Reading Task

Selections - Round II

General Instructions

This reading task focuses on the fundamental aspects of **Finite Element Analysis** (FEA). In mechanics class, you must have gone through (or are going through) calculating stresses and strains on various bodies for a given state of load.

For complex structures, this becomes difficult, as most assumptions fall apart (linearity, Euler-Bernoulli conditions, statical determinancy). Here is when numerical techniques are required to solve differential equations which govern the deformation of bodies.

While this can be done by hand, this becomes increasingly tedious for any body of palpable dimensions, the huge amounts of data become hard to visualize, and you will need to know a lot of fine-tuning to get stable solutions in the minimum number of iterations (look up Numerical Solutions to Differential Equations when free).