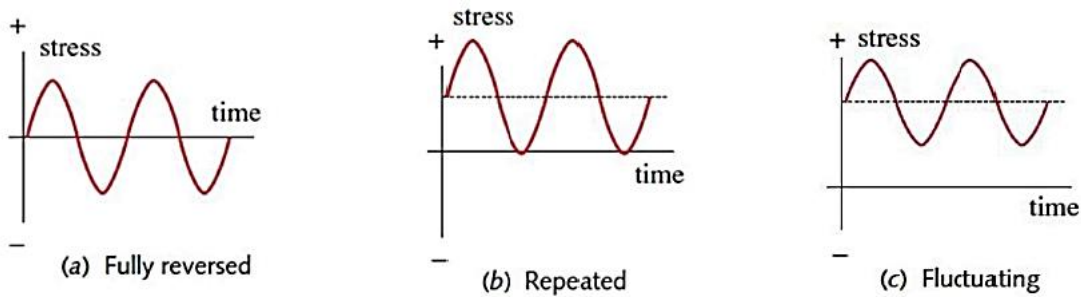
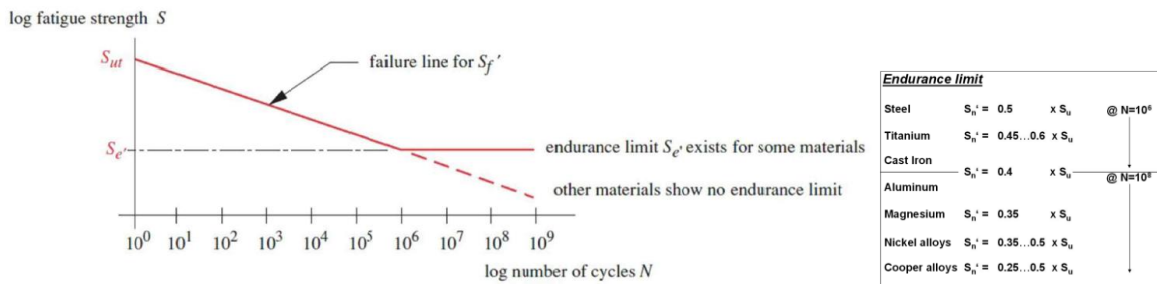


1. Time-varying stresses



2. Typical S-N Diagram



3. Fatigue strength for various loading conditions

**Rotating Bending** (Moore testing)

maximum stresses **on surface**  
weakest point  $\rightarrow$  fatigue start

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**Reversed Bending** (not rotating bending like in Moore testing)

maximum stresses **only @ top and bottom**  
high probability not weakest point

Fatigue strength usually slightly greater  
deliberately neglected  $\rightarrow$  safe side

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**Reversed Axial Loading**

maximum stresses **entire cross section**  
no reserve!

Fatigue strength about 10% less }  $C_e = 0.7 \dots 0.9$   
eccentric loads about 20...30% less } gradient factor

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**Reversed Torsional Loading**

maximum stresses **on surface**  
**shear stresses**  $\rightarrow$  fatigue start

reversed biaxial stress }  $C_L = 0.58$   
distortion energy theory  $\rightarrow$  58% } load factor