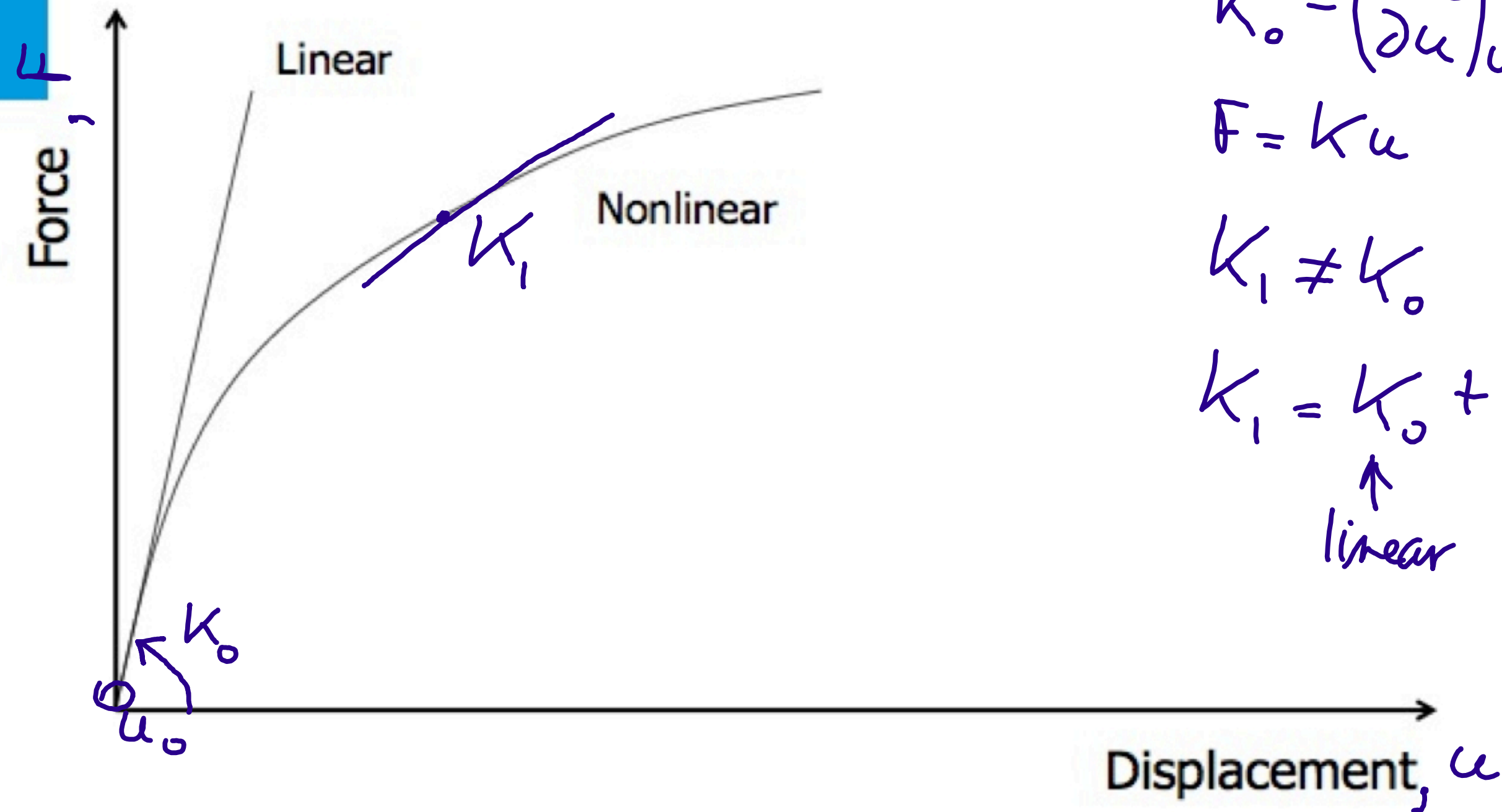


AE4536: Buckling of structures

Terminology

Roeland De Breuker
28/08/13

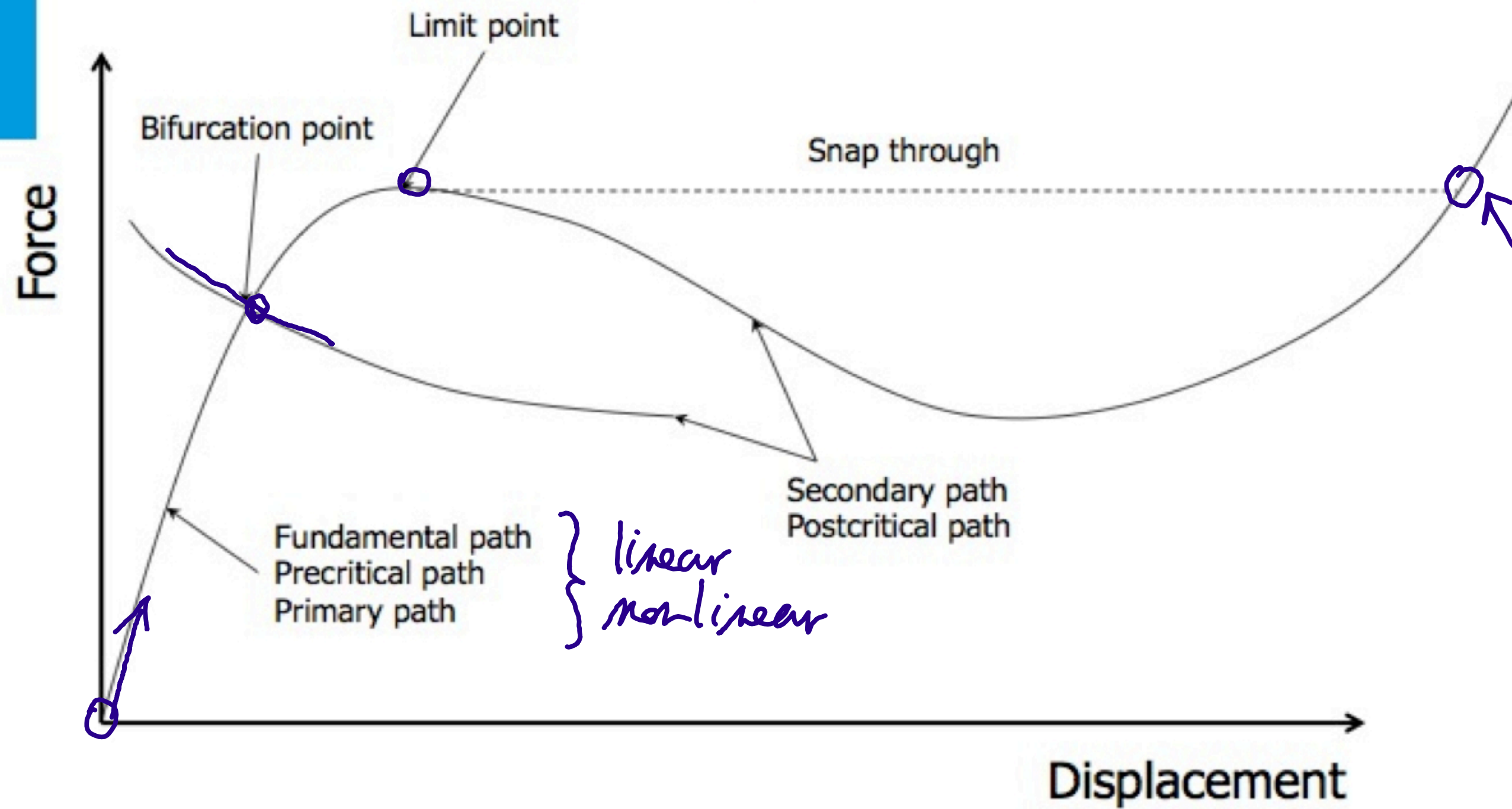
Linear vs nonlinear model



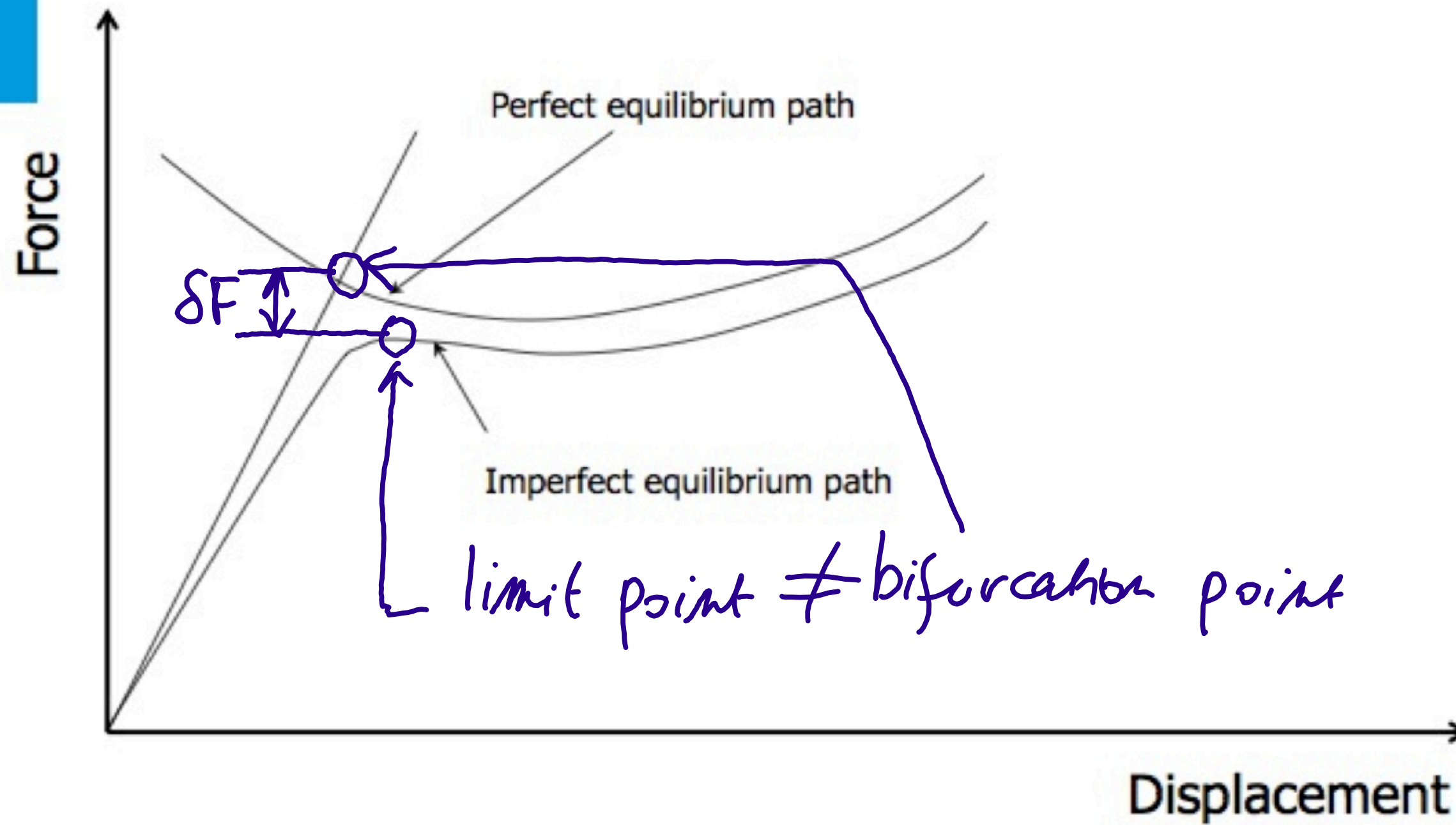
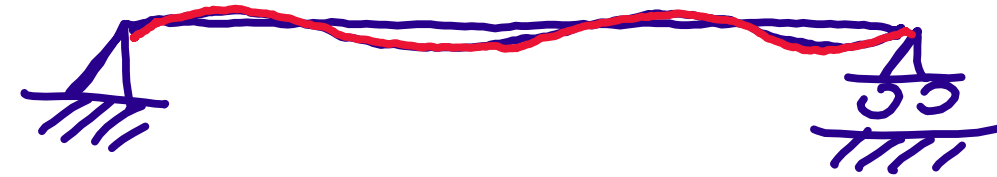
$$K_0 = \left(\frac{\partial F}{\partial u} \right)_{u_0}$$
$$F = K u \quad \text{linear(ised)}$$
$$K_1 \neq K_0$$
$$K_1 = K_0 + \underbrace{F \cdot G}_{\text{geometric}}$$


↑ linear

Types of buckling



Imperfections





Terminology

- Primary/precritical/fundamental path
- Postcritical/secondary path
- Stable vs unstable equilibrium

- Bifurcation point
- Limit point

- Snap through
- Collapse

- Imperfection

- Linear vs nonlinear analysis