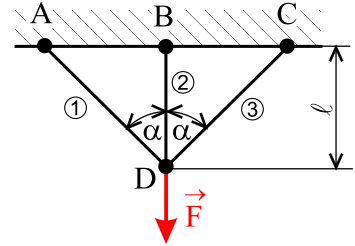


Problem 427

The structure in the figure is made of slender bars of the same circular cross sections S . It is loaded by the force \vec{F} . Evaluate the safety factor against the limit state of elasticity. The geometry, loads and material characteristics (all the three bars are made of the same material) are known (cross section area S , yield stress σ_K and Young's modulus E). The bar No 2 is made by δ shorter than the nominal length in the drawing. Gravitational forces and temperature changes can be neglected.



[Solutions](#)

[systems with bars](#)

[support conditions](#)

[Castigliano's theorem](#)