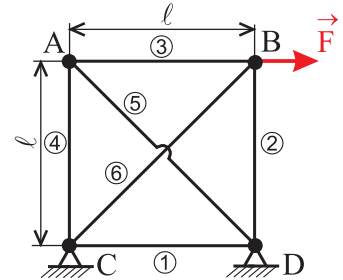


Problem 436

The strut frame in the figure was made with the bar No. 2 by δ shorter than the nominal value in the drawing; the frame is loaded by the force \vec{F} . Evaluate the safety factor against the limit state of elasticity. The geometry, material and cross section characteristics are known (all the bars have the same cross section S , their length is on a higher order than the transversal dimensions, they are made of the same material (Young's modulus E , yield stress σ_K). Gravitational forces and temperature changes are negligible.



Solutions

systems with bars

Castigliano's theorem