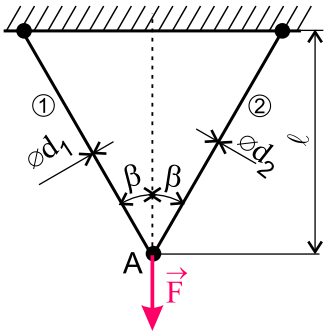
Problem 415

Two homogeneous bars are joint in the point A. Determine the maximum admissible load so that the linearity of the problem is not be violated. The diameters of the bars+1 and+2 are d_1 and d_2, respectively. Both bars are made of the same material with the known material characteristics.

Input values:

$\varnothing d_1 = 50\,\text{mm}$, $\varnothing d_2 = 30\,\text{mm}$, $l = 1\,\text{m}$,
$\beta = 30^o$, $E = 2 \cdot 10^5\,\text{MPa}$, $\sigma_K = 400\,\text{MPa}$.



tension systems with bars