

Determine the shear modulus of a Neo Hookean material

We hang 3 different weights (500g, 1kg and 11.5kg) to a rubber band of length $L_0=120\text{mm}$ and cross section $S_0=20\text{mm}^2$. We measure the following lengths for each hanging weights respectively: 190mm, 300mm, 400mm.

Find the shear modulus of the rubber assuming that it behaves as a Neo Hookean material