

It is observed from frequent experimentation ~~has~~ shown that drawing ~~pulling the~~ identical bars from of steel and rubber ~~having the same initial lengths~~ by ~~the~~ same axial force, and ~~consequently thus the~~ same axial stress, results ~~of stress~~ in different elongations ~~from of~~ these two bars. ~~This material in mechanics, the~~ difference ~~the two bars in mechanical~~ the materials of the two bars is represented by the ~~the~~ relationship between the components of stress and ~~the~~ strain. ~~By The~~ ~~writing~~ expressing each of these ~~like as~~ a column matrix ~~of column~~, i.e.,

$$\{\rho\}^T = [\rho_{12} \ \rho_{22} \ \rho_{33} \ \rho_{32} \ \rho_{31}] \quad (1)$$

$$\{d\}^T = [d_{12} \ d_{22} \ d_{33} \ d_{32} \ d_{31}] \quad (2)$$

~~have us~~

~~we obtain~~

$$\{\rho\} = [X]\{d\} \text{ or } \rho_\alpha = X_{\alpha\beta}d_\beta, \alpha, \beta = 1, 2, \dots, 5. \quad (3)$$

~~where~~ Here, X is a ~~5 × 5~~ 5 matrix that characterizes the material of the body, ~~and is generally~~. It is generally ~~called~~ known as the matrix of elasticity ~~and matrix~~; its components ~~elasticity's~~ are called elasticities or elastic constants of elasticity for the material of the body. ~~Note that~~ The shear strains have been multiplied by 2 in ~~eqn.~~ Eq. (2); ~~the~~ definitions (1) and (2) ~~make ensure~~ that $\rho_{ij}d_{ij} = \rho_\alpha d_\alpha$. The ~~stress-strain equation~~ (3), ~~in other words the~~ relation ~~shown in~~ between the stresses and strains, ~~are~~ Eq. (3) is ~~called~~ known as the ~~relation~~ constitutive relation for the material of the body. It is assumed in Eq. (3) that the body is ~~stress-free~~ in the ~~reference~~ configuration of reference from which the strain d is measured.

Comment [A1]: The verb should agree with the subject of the sentence. Because "experimentation" is singular, the verb form "has" will also be singular.

Comment [A2]: In academic writing, information is presented with accuracy and conciseness. Formal language is a hallmark of academic English. One way to ensure conciseness in expression is converting phrasal verbs to formal words. In this instance, "writing" is replaced with "expressing."

Comment [A3]: In American English, place a comma after the Latin abbreviations i.e. and e.g.

Comment [A4]: Use a multiplication sign (×) instead of the letter x at such instances. Note that a space should be inserted before and after the sign.

Comment [A5]: A semicolon is stronger than a comma and weaker than a period. When two independent sentences are closely connected in meaning and no coordinating conjunction is present, a semicolon can be used.

Comment [A6]: To preserve meaning that might otherwise be lost, some words that have to be hyphenated.