ACE-X2016

Classical Continuum Mechanics and Beyond

Holm Altenbach

Lehrstuhl für Technische Mechanik, Institut für Mechanik, Fakultät für Maschinenbau,
Otto-von-Guericke-Universität Magdeburg, Universitätsplatz 2, D-39106, Germany
holm.altenbach@ovgu.de

ABSTRACT:

The classical continuum mechanics is well studied and a lot of engineering applications are established. As usual the starting point are the three-dimensional statements for the deformations, stresses, balances and constitutive equations. Here we start with the one-dimensional equations recently deduced by Naumenko & Altenbach (2016). The three-dimensional equations are presented by analogy. The last part is devoted to some new trends and developments like gradient theories or theories for nanostructures.