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HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
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FACHBEREICH MATHEMATIK
UND NATURWISSENSCHAFTEN

mn seminar

Modelling anisotropic materials with gradients in elastic properties

This talk will present development of three-dimensional analytical solutions to some solid mechanics problems for functionally graded materials. These materials are advanced composite materials with properties that vary from one surface of the material to the other as a result of an intentionally introduced gradient in the composition of the material.
Analysis of the mechanical behavior of materials with anisotropic properties is associated with considerable mathematical difficulties. The talk will show on how stresses and displacements in an in-homogeneous transversely isotropic solid, with constant Poisson's ratios and the same functional form of dependence of Young's and shear moduli on the co-ordinate normal to the plane of isotropy, can be represented in terms of two displacement functions and used to derive three-dimensional elasticity solutions for some practical applications.

Prof. Dr. Maria Kashtalyan
(CEMINACS, University of Aberdeen)

Di 01. Dezember 2015
16:15 Uhr

Hochschule Darmstadt
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