

Effect of voids in a heat-flux dependent theory for thermoelastic bodies with dipolar structure

MARIN MARIN, ANDREAS ÖCHSNER and SORIN VLASE

ABSTRACT.

In our paper we formulate a theory for thermoelastic porous dipolar bodies in which we consider a new independent variable, namely the heat-flux vector. Furthermore, we add, to the differential equations that describe the behavior of the body, a new differential equation which is an equation of evolution which is satisfied by the components of the heat-flux vector. The basic system of the mixed initial-boundary value problem in this context consists of equations of the hyperbolic type. In order to ensure the consistency of the constructed theory, we formulate and prove an uniqueness result, with regards to the solution of the mixed problem.

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Corresponding author: Marin Marin; m.marin@unitbv.ro

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TRANSILVANIA UNIVERSITY OF BRAȘOV
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
29 B-DUL EROILOR, 500036 BRAȘOV, ROMANIA
Email address: m.marin@unitbv.ro
Email address: svlase@unitbv.ro

ESSLINGEN UNIVERSITY OF APPLIED SCIENCES
FACULTY OF MECHANICAL ENGINEERING
73728 ESSLINGEN, GERMANY
Email address: andreas.oechsner@gmail.com