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北京理工大学张景瑞说：文章有共同作者就不算抄袭？

近日，北京理工大学杰青对我司早前一个报道 [1] 提出质疑，认为我司“隐藏对此文章有共同作者（编者按：指 Yanyan Li）的事实”，大意是认为：两篇文章有共同作者就不算抄袭。

投诉内容	双一流，国家杰青，把别人的文章搬过来再发了一遍，这次是谁？
投诉账号	科学人Scientist （ScientistCN）
投诉类型	内容侵犯名誉/隐私/肖像
投诉描述	以下内容非微信官方提供，由权利人投诉时填写，请谨慎操作。 在文章中间直接写出本人工作单位及姓名，侵犯名誉权，且相关内容信息不实：发布者为博取热度，以夸张标题引流，歪曲并隐藏对比文章具有共同作者的事实，捏造剽窃抄袭的谣言，恶意误导公众，意图通过网络对本人引起舆论讨伐，该内容已对本人生活与工作造成极大困扰，为维护本人权益，请平台依据相关互联网治理条例对其下架。
证明资料	其它
保证声明	权利人及其代理人（统称为：声明人）诚意作如下声明： 声明人在通知书中的陈述和提供的相关材料皆是真实、有效、合法的，并保证承担和赔偿腾讯因根据声明人的通知书对相关账号的处理而给腾讯造成的任何损失，包括但不限于腾讯因向被投诉方或用户赔偿而产生的损失及腾讯名誉、商誉损害等。

且不论这个论点如何荒谬，让我们看一下完整的对比（早前报道 [1] 只列举了关键对比），来判断：有共同作者的情况下，这两篇文章 [2-3] 是否属于抄袭？

Zhang's paper (left)：10.1155/2014/964218 (2014)
He's paper (right)：10.1142/S1758825112500469 (2012)

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Research Article

A Two-Dimensional Generalized Electromagnetothermoelastic Diffusion Problem for a Rotating Half-Space

Jingrui Zhang and Yanyan Li

School of Astronautics, Beijing Institute of Technology, Beijing 100081, China

Correspondence should be addressed to Jingrui Zhang; zhangjingrui@bit.edu.cn

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FINITE ELEMENT METHOD TO A GENERALIZED ELECTROMAGNETO-THERMOELASTIC PROBLEM WITH DIFFUSION

TIANHU HE*, YANYAN LI and SHUANHU SHI
School of Science, Lanzhou University of Technology
Lanzhou 730050, P. R. China
*heth@lut.cn

Plagiarism in Abstract

Zhang's paper

In the context of the theory of generalized thermoelastic diffusion, a two-dimensional generalized electromagneto-thermoelastic problem with diffusion for a half-space is investigated. The half-space is placed in an external magnetic field with constant intensity and its bounding surface is subjected to a thermal shock and a chemical potential shock. The governing equations of the problem are formulated and solved numerically by means of finite element method. The derived finite element equations are solved directly in time domain. The nondimensional temperature, displacement, stress, chemical potential, concentration and induced magnetic field are obtained and illustrated graphically. The results show that all the considered variables have a nonzero value only in a bounded region and vanish identically outside this region, which fully demonstrates the nature of the finite speeds of thermoelastic wave and diffusive wave.

He's paper

In the context of the theory of generalized thermoelastic diffusion, a two-dimensional generalized electromagnetothermoelastic problem with diffusion for a rotating half-space is investigated. The rotating half-space is placed in an external magnetic field with constant intensity and its bounding surface is subjected to a thermal shock and a chemical potential shock. The problem is formulated based on finite element method and the derived finite element equations are solved directly in time domain. The nondimensional temperature, displacement, stress, chemical potential, concentration, and induced magnetic field are obtained and illustrated graphically. The results show that all the considered variables have a nonzero value only in a bounded region and vanish identically outside this region, which fully demonstrates the nature of the finite speeds of thermoelastic wave and diffusive wave.

Plagiarism in Introduction (1)

Zhang's paper

Biot [1] proposed the coupled thermoelasticity to amend a defect in uncoupled thermoelasticity that elastic deformation has no effect on temperature. However, this theory shares another defect in uncoupled thermoelasticity in that it predicts infinite speed for heat propagation, which is physically impossible. To overcome such defect, the generalized thermoelastic theories have been developed by Lord and Shulman (L-S) [2] and Green and Lindsay (G-L) [3]. Both theories can characterize the so-called second sound effect; that is, heat propagates in medium with a finite speed. The L-S theory was later extended by Dhaliwal and Sherief [4] to the case of anisotropic media. Based on these generalized thermoelastic theories, many efforts have been devoted to dealing with the generalized dynamic problems. Sherief and Dhaliwal [5] studied a one-dimensional thermal shock problem by the Laplace transform technique and its inverse transform. Dhaliwal and Rokne [6] solved a thermal shock problem of a half-space with its plane boundary either held rigidly fixed or stress-free and an approximate small-time solution was obtained by using the Laplace transform method. Sherief and Anwar [7] considered the thermoelastic problem of a homogeneous isotropic thick plate of infinite extent with heating on a part of the surface by means of state space approach together with Laplace and Fourier integral transforms and their inverse counterparts.

He's paper

Biot [1956] proposed the coupled thermoelasticity to amend a defect in uncoupled thermoelasticity that elastic deformation has no effect on temperature. However, this theory shares another defect in uncoupled thermoelasticity in that it predicts infinite speed for heat propagation, which is physically impossible. To overcome such defect, the generalized thermoelastic theories have been developed by Lord and Shulman (L–S) [1967] and Green and Lindsay (G–L) [1972]. Both theories can characterize the so-called second sound effect, i.e., heat propagates in medium with a finite speed. The L–S theory was later extended by Dhaliwal and Sherief [1980] to the case of anisotropic media. Based on the classical uncoupled and coupled as well as generalized coupled thermoelastic theories, many efforts have been devoted to dealing with the dynamic problems of elastic solids. Sherief and Dhaliwal [1981] studied a one-dimensional thermal shock problem by the Laplace transform technique and its inverse transform. Dhaliwal and Rokne [1989] solved a thermal shock problem of a half-space with its plane boundary either held rigidly fixed or stress-free and an approximate small-time solution was obtained by using the Laplace transform method. Sherief and Anwar [1994] considered the thermoelastic problem of a homogeneous isotropic thick plate of infinite extent with heating on a part of the surface by means of state space approach together with Laplace and Fourier integral transforms and their inverse counterparts. Brischetto and Carrera [2011] investigated the free vibration problem of one-layered and two-layered metallic plates. Akbarzadeh *et al.*, [2011] investigated the dynamic response of a functionally graded piezoelectric rod subjected to a moving heat source by Laplace transform and numerical Laplace inversion method. Upon applying the L–S and G–L models to the theory of thermo-microstretch given by Eringen [1990], Kumar *et al.* [2011] studied the propagation of straight and circular crested waves in microstretch thermoelastic plates bordered with inviscid liquid layers, with varying temperature on both sides.

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Plagiarism in Introduction (2)

Zhang's paper

Investigation of the propagation of electromagnetothermoelastic waves in a thermoelastic solid has attracted much attention due to its extensive potential applications in diverse fields, such as geophysics for understanding the effect of the Earth's magnetic field on seismic waves, damping of acoustic waves in a magnetic field, and emissions of electromagnetic radiations from nuclear devices. Sharma and Chand [8] analyzed a one-dimensional transient magnetothermoelastic problem by introducing a potential function. Ezzat et al. [9] researched a two-dimensional electromagnetothermoelastic plane wave problem of a medium of perfect conductivity in terms of normal mode analysis. Sherief and Helmy [10] dealt with a two-dimensional electromagnetothermoelastic problem for a finitely conducting half-space by Laplace and Fourier transforms. Tianhu et al. [11] studied the electromagnetic-thermoelastic interactions in a semi-infinite perfectly conducting solid by hybrid Laplace transform-finite element method. Ezzat and Youssef [12] solved the problem of generalized magnetothermoelasticity in a perfectly conducting medium by means of Laplace and Fourier transform techniques. Sharma and Thakur [13] studied the effect of rotation on Rayleigh-Lamb waves in magnetothermoelastic media. Othman and Song [14] studied the effect of rotation on plane waves of generalized electromagnetothermoviscoelasticity with two relaxation times. Guan [15] studied a two-dimensional of a rotating half-space by using Laplace transform and its numerical inversion. He and Jia [16] studied a two-dimensional of a rotating half-space by using the normal mode analysis. Othman and Song [17] investigated reflection of magnetothermoelastic waves in a rotating medium. Recently, Deswal and Kalkal [18] considered a two-dimensional generalized electromagnetothermoviscoelastic problem for a half-space with diffusion whose surface is subjected to mechanical and thermal loads by introducing potential functions along with the normal modes based on G-L theory.

He's paper

Investigation of the propagation of electromagneto-thermoelastic waves in a thermoelastic solid has attracted much attention due to its extensive potential applications in diverse fields, such as geophysics for understanding the effect of the Earth's magnetic field on seismic waves, damping of acoustic waves in a magnetic field, emissions of electromagnetic radiations from nuclear devices etc. Sharma and Chand [1988] analyzed a one-dimensional transient magneto-thermoelastic problem by introducing a potential function. Ezzat *et al.* [2000] researched a two-dimensional electromagneto-thermoelastic plane wave problem of a medium of perfect conductivity in terms of normal mode analysis. Sherief and Helmy [2002] dealt with a two-dimensional electromagneto-thermoelastic problem for a finitely conducting half-space by Laplace and Fourier transforms. He *et al.* [2004] studied the electromagnetic-thermoelastic interactions in a semi-infinite perfectly conducting solid by hybrid Laplace transform-finite element method. Ezzat and Youssef [2005] solved the problem of generalized magneto-thermoelasticity in a perfectly conducting medium by means of Laplace and Fourier transform techniques. Othman and Song [2008] investigated reflection of magneto-thermoelastic waves in a rotating medium. Recently, Deswal and Kalkal [2011] considered a two-dimensional generalized electromagneto-thermo-viscoelastic problem for a half-space with diffusion whose surface is subjected to mechanical and thermal loads by introducing potential functions along with the normal modes based on G–L theory. Fahmy [2011] investigated the transient magneto-thermo-viscoelastic stresses in a rotating nonhomogeneous anisotropic solid placed in a constant primary magnetic field by a numerical model based on the dual reciprocity boundary element method (DRBEM). Xiong and Tian [2011] studied the magneto-thermoelastic problem of a semi-infinite body with voids and temperature-dependent material properties in the context of L–S and G–L theories by using finite element method.

5 GH Foundation

Plagiarism in Introduction (3)

Zhang's paper

Diffusion can be defined as the random walk of an ensemble of particles from regions of high concentration to regions of lower concentration. There is now a great deal of interest in the study of this phenomenon due to its diverse applications in geophysics and industry. In geology, diffusion principle has been applied to measuring the diffusion coefficients of various cations in minerals which are present in the Earth's crust. In diffusion bonding, diffusion technique is used to join metallic or nonmetallic materials together. In heat treatment of metals, the surface characteristics of metals, such as wear and corrosion resistance and hardness, can be improved by carburizing through diffusion. In integrated circuit fabrication, diffusion is used to introduce dopants in controlled amounts into the semiconductor substrate. In particular, diffusion is used to form the base and emitter in bipolar transistors, integrated resistors, the source/drain regions in MOS transistors, and dope polysilicon gates in MOS transistors. In the above cases, temperature plays a vital role in the process of diffusion and it is urgent to explore the interactions among diffusion field, strain field, temperature field, and so forth. Normally, the diffusion process is modeled by what is known as Fick's law, which does not take into consideration the mutual interplay between the introduced substance and the substrate or the effect of temperature on the interplay. Nowacki [19–21] put forward the theory of thermoelastic diffusion in which the coupled thermoelastic model was formulated and infinite speed of propagation of thermoelastic wave was predicted. Recently, Sherief et al. [22] extended this theory associating with L-S model to a generalized thermoelastic diffusion theory that predicts finite speeds of propagation for thermoelastic and diffusive waves. Following this theory, Sherief and Saleh [23] studied a one-dimensional problem of a half-space by using Laplace transform and its numerical inversion. Singh [24] analyzed the reflection problem of SV wave from free surface in an elastic solid. Aouadi [25] examined the thermoelastic diffusion problem for an infinite elastic body with a spherical cavity. Xia et al. [26] worked on the dynamic response of an infinite body with a cylindrical cavity by using finite element method.

He's paper

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Plagiarism in Introduction (4)

Zhang's paper

In the present work, a two-dimensional generalized electromagnetothermoelastic problem with diffusion for a rotating half-space is studied in the context of the theory of the generalized thermoelastic diffusion. The problem is formulated based on finite element method and the derived finite element equations are solved directly in time domain. The variations of the considered variables are obtained and illustrated graphically.

He's paper

So far, to the authors' knowledge, there are few works relating to the study of the dynamic response of generalized electromagneto-thermoelastic problem with diffusion. In present work, a two-dimensional generalized electromagneto-thermoelastic problem with diffusion for a half-space is studied in the context of the theory of the generalized thermoelastic diffusion. The problem is formulated based on finite element method and the derived finite element equations are solved directly in time domain. The variations of the considered variables are obtained and illustrated graphically.

Plagiarism in Basic Equations (1)

The linear electrodynamic equations of slowly moving medium for a homogeneous and perfectly conducting elastic solid are given by Maxwell's equations as follows:

$$\nabla \times h = J + \varepsilon_0 \dot{E}, \quad (1)$$

$$\nabla \times E = -\mu_0 \dot{h}, \quad (2)$$

$$E = -\mu_0 (\dot{u} \times H), \quad (3)$$

$$\nabla \cdot h = 0, \quad (4)$$

where H is the applied external magnetic field intensity vector, h is the induced magnetic field vector, E is the induced electric field vector, J is the current density vector, u is the displacement vector, μ_0 and ε_0 are the magnetic permeability and electric permeability, respectively, and ∇ is Hamilton's operator.

In the absence of body force and inner heat source, the generalized electromagnetothermoelastic diffusive governing equations based on the generalized thermoelastic diffusion theory put forth by Sherief et al. [22] can be written as

Zhang's paper

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In the absence of body force and inner heat source, the generalized electro-magneto-thermoelastic diffusive governing equations based on the generalized thermoelastic diffusion theory put forth by Sherief *et al.* [2004] can be written as:

He's paper

Plagiarism in Basic Equations (2)

In the above equations, a superimposed dot denotes the derivative with respect to time, a comma followed by a suffix denotes material derivative, and the summation convention is used. σ_{ij} are the components of the stress tensor, ε_{ij} are the components of the strain tensor, u_i are the components of displacement vector, κ_{ij} are the coefficients of thermal conductivity, S is the entropy density, F_i are the components of Lorentz force, Ω is the angular velocity, η_i is the flow of the diffusing mass vector, q_i are the components of heat flux vector, τ_0 is the thermal relaxation time, τ is the diffusion relaxation time, T is the absolute temperature, T_0 is the initial reference temperature, ρ is the mass density, C_E is the specific heat at constant strain, α_t is the coefficient of linear thermal expansion, α_c is the coefficient of linear diffusion expansion, D_{ij} are the coefficients of diffusion, C is the concentration of diffusive material, λ, μ are Lame's constants, P is the chemical potential, "a" is a measure of thermodiffusion effect, and "b" is a measure of diffusive effect.

Zhang's paper

In the above equations, a superimposed dot denotes the derivative with respect to time, a comma followed by a suffix denotes material derivative and the summation convention is used. σ_{ij} are the components of the stress tensor, ε_{ij} is the components of the strain tensor, u_i is the components of displacement vector, κ_{ij} is the coefficients of thermal conductivity, S is the entropy density, F_i is the components of Lorentz force, η_i is the flow of the diffusing mass vector, q_i is the components of heat flux vector, τ_0 is the thermal relaxation time, τ is the diffusion relaxation time, T is the absolute temperature, T_0 is the initial reference temperature, ρ is the mass density, C_E is the specific heat at constant strain, α_t is the coefficient of linear thermal expansion, α_c is the coefficient of linear diffusion expansion, D_{ij} is the coefficients of diffusion, C is the concentration of diffusive material, λ, μ are

Lame's constants, P is the chemical potential, "a" is a measure of thermodiffusion effect and "b" is a measure of diffusive effect.

He's paper

Plagiarism in Basic Equations (3)

Zhang's paper

We consider the problem of a homogeneous, isotropic, and perfectly conducting thermoelastic rotating half-space $(x \geq 0)$. A magnetic field with constant intensity $H = (0, 0, H_0)$ acts parallel to the bounding surface (taken as the direction of the z-axis). At the same time, angular velocity $\Omega = (0, 0, \Omega)$ in half-space goes around the z-axis. Considering rotating effect, the equation of motion is included in the centripetal acceleration related to time and Coriolis acceleration $\Omega \times (\Omega \times u)$ item $2\Omega \times \dot{u}$. The surface of the half-space is subjected at time $t = 0$ to a thermal shock and a chemical potential that are functions of y and t. Thus, all the variables will be functions of time t and coordinates x and y. Due to the application of **H**, this results in an induced magnetic field h and an induced electric field E in the half-space when it undergoes deformation.

It can be noted from (19)–(22c) that the induced electric field, the induced magnetic field, and the Lorentz force are functions of the components of displacement, which implies that the generalized electromagnetothermoelastic problems with diffusion can then be treated as a generalized thermoelastic one with diffusion. Once the components of displacement are obtained, the induced electric field and the induced magnetic field can be calculated from (19) and (20), respectively.

He's paper

We consider the problem of a homogeneous, isotropic and perfectly conducting thermoelastic half-space $(x \geq 0)$. A magnetic field with constant intensity $\mathbf{H} = (0, 0, H_0)$ acts parallel to the bounding surface (taken as the direction of the z-axis). The surface of the half-space is subjected at time $t = 0$ to a thermal shock and a chemical potential that are functions of y and t. Thus, all the variables will be functions of time t and coordinates x and y. Due to the application of **H**, there results in an induced magnetic field **h** and an induced electric field **E** in the half-space when it undergoes deformation.

It can be noted from Eqs. (16)–(19c) that the induced electric field, the induced magnetic field and the Lorentz force are functions of the components of displacement, which implies that the generalized electromagneto-thermoelastic problems with diffusion can then be treated as a generalized thermoelastic one with diffusion. Once the components of displacement are obtained, the induced electric and the induced magnetic field can be calculated from Eqs. (16) and (17), respectively.

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Plagiarism in Basic Equations (3)

Zhang's paper

Generally speaking, for generalized multifield problems, the involved physical fields, such as electromagnetic field, temperature field, strain field, and diffusion field, would couple with each other, which makes the governing equations of such problems usually too complex to get the solutions by analytical method, so that numerical methods would be powerful tools to solve such problems. One feasible way can be the integral transform techniques. By means of this method, the partial differential governing equations can be converted into ordinary differential equations and solved in transform domain. By applying inverse transform, the solutions of the problem in time domain can then be obtained. However, this method encounters loss of precision believed to be caused by discretization error and truncation error introduced inevitably in the process of numerical inverse Laplace and Fourier transforms, which leads to identifying heat wave front and prediction of the second sound effect, the result of the [27], is thus not so obvious as that the result of [5, 6] showing clear step in the temperature field for small time. An alternative choice to such problems is the hybrid Laplace transform-finite element method presented by Chen and Weng [28, 29]. The same as depicted above, this method also encounters loss of precision and the step of the temperature in the heat wave front is not obvious either. Therefore, the applicability of the integral transform techniques as well as the hybrid Laplace transform-finite element method to generalized thermoelastic problems is limited. To avoid the defects of the above methods, we are inspired to formulate our problem by finite element method and directly solve the derived nonlinear finite element equations in time domain as reported by Tian et al. in [30] in which the obtained results show that this method can achieve a high calculation precision. The diffusion problem done by Xia et al. [26] was just solved by using this method recently.

He's paper

Generally speaking, for generalized multi-field problems, the involved physical fields, such as electromagnetic field, temperature field, strain field, diffusion field etc., would couple with each other, which makes the governing equations of such problems are usually too complex to get the solutions by analytical method, so that numerical methods would be powerful tools to solve such problems. One feasible way can be the integral transform techniques. By means of this method, the partial differential governing equations can be converted into ordinary differential equations and solved in transform domain. By applying inverse transform, the solutions of the problem in time domain can then be obtained. However, this method encounters loss of precision believed to be caused by discretization error and truncation error introduced inevitably in the process of numerical inverse Laplace and Fourier

transforms, which leads to identifying heat wave front and prediction of the second sound effect, for instance Sherief and Megahed [1999], are thus not so obvious as that Sherief and Dhaliwal [1981] and Dhaliwal and Rokne [1989] showing clear step in the temperature field for small time. An alternative choice to such problems is the hybrid Laplace transform-finite element method presented by Chen and Weng [1988, 1989]. The same as depicted above, this method also encounters loss of precision and the step of the temperature in the heat wavefront is not obvious either. Therefore, the applicability of the integral transform techniques as well as the hybrid Laplace transform-finite element method to generalized thermoelastic problems is limited. To avoid the defects of the above methods, we are inspired to formulate our problem by finite element method and directly solve the derived nonlinear finite element equations in time domain as reported by Tian *et al.* [2006] in which the obtained results show this method can achieve a high calculation precision. The diffusion problem done by Xia *et al.* [2009] was just solved by using this method recently.

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Plagiarism in Finite Element Formulations (1)

Zhang's paper

Rewrite (5), (6), and (7) in matrix form as follows:

$$\{\sigma\} = [C_0]\{\varepsilon\} - \{\gamma_1\}\theta - \{\gamma_2\}P,$$
$$\{C\} = \{\gamma_2\}^T\{\varepsilon\} + d\theta + nP, \quad (23)$$
$$\rho S = \{\gamma_1\}^T\{\varepsilon\} + c_1\theta + dP.$$

The generalized heat conduction law and Fick's law of mass diffusion can be written in matrix form as

$$\{q\} + \tau_0\{\dot{q}\} = -[\kappa]\{\theta'\},$$
$$\{\dot{C}\} + \tau\{\ddot{C}\} = [D]\{P''\}, \quad (24)$$

where $\theta' = \theta_{,i}$, $P'' = P_{,ii}$.

According to finite element method, the half-space can be divided into elements and nodal points and any variable considered within an element can be approximated by the values of nodal points together with shape functions. To this end, we introduce two sets of shape functions to approximate the displacement, the temperature, and the chemical potential on the element level:

$$\{u\} = [N_1^e]\{u^e\}, \qquad \theta = \{N_2^e\}^T\{\theta^e\}, \qquad P = \{N_2^e\}^T\{P^e\}, \quad (25)$$

where $\{u^e\}$, $\{\theta^e\}$, and $\{P^e\}$ are the vectors of nodal displacement, temperature, and chemical potential, respectively. $[N_1^e]$ and $\{N_2^e\}$ are shape functions; they are

$$[N_1^e] = \begin{bmatrix} N_1 & 0 & N_2 & 0 & \cdots & N_n & 0 \\ 0 & N_1 & 0 & N_2 & 0 & \cdots & N_n \end{bmatrix},$$
$$\{N_2^e\}^T = \{N_1 \ N_2 \ \cdots \ N_n\}, \quad (26)$$

where n denotes the number of nodes in the grid.

He's paper

Rewrite Eqs. (5), (6) and (7) in matrix form as follows:

$$\{\sigma\} = [C_0]\{\varepsilon\} - \{\gamma_1\}\theta - \{\gamma_2\}P,$$
$$\{C\} = \{\gamma_2\}^T\{\varepsilon\} + d\theta + nP, \quad (20)$$
$$\rho S = \{\gamma_1\}^T\{\varepsilon\} + c_1\theta + \mathrm{d}P.$$

The generalized heat conduction law and Fick's law of mass diffusion can be written in matrix form as

$$\{q\} + \tau_0\{\dot{q}\} = -[\kappa]\{\theta'\},$$
$$\{\dot{C}\} + \tau\{\ddot{C}\} = [D]\{P''\}, \quad (21)$$

where $\theta' = \theta_{,i}$, $P'' = P_{,ii}$.

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where $\{u^e\}$, $\{\theta^e\}$ and $\{P^e\}$ are the vectors of nodal displacement, temperature and chemical potential respectively. $[N_1^e]$ and $\{N_2^e\}$ are shape functions. They are

$$[N_1^e] = \begin{bmatrix} N_1 & 0 & N_2 & 0 & \cdots & N_n & 0 \\ 0 & N_1 & 0 & N_2 & 0 & \cdots & N_n \end{bmatrix},$$
$$\{N_2^e\}^T = \{N_1 \ N_2 \ \cdots \ N_n\}, \quad (23)$$

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FEM to a Generalized Electromagneto-Thermoelastic Problem

where n denotes the number of nodes in the grid.

Plagiarism in Finite Element Formulations (2)

Zhang's paper

In terms of $\varepsilon_{ij} = (u_{i,j} + u_{j,i})/2$, $\theta' = \theta_{,i}$, and $P' = P_{,i}$, it yields

$$\{\varepsilon\} = [B_1]\{u^e\}, \qquad \{\theta'\} = [B_2]\{\theta^e\},$$
$$\{P'\} = [B_2]\{P^e\}, \quad (27)$$

where $[B_1]$ is the strain matrix. In view of the coordinates x and y, $[B_1]$ and $[B_2]$ are

In the absence of body force and inner heat source, considering the Lorentz force F_i, the virtual displacement principle of the generalized electromagnetothermoelastic problems with diffusion can be formulated as

$$\int_V \left[\delta\{\varepsilon\}^T\{\sigma\} - \rho T_0\left(\dot{S} + \tau_0\ddot{S}\right)\delta\{\theta\} + \delta\{\theta'\}^T\{q + \tau_0\dot{q}\} + \delta\{P'\}^T(\eta + \tau\dot{\eta}) - \delta\{P\}^T\left(\dot{C} + \tau\ddot{C}\right)\right]dV$$
$$= \int_V \delta\{u\}^T(\{F\} - \rho[\{\ddot{u}\} + \{\Omega\times(\Omega\times u)\} + \{2\Omega\times\dot{u}\}])\,dV$$
$$+ \int_{A_\sigma}\delta\{u\}^T\{\bar{T}\}\,dA + \int_{A_q}\delta\theta\bar{q}\,dA + \int_{A_\eta}\delta P\{\bar{\eta}\}\,dA, \quad (30)$$

where $\{\bar{T}\}$ represents the traction vector, $\bar{q}$ the heat flux vector, and $\{\bar{\eta}\}$ the mass flux vector, and the variables with a superimposed bar mean that they are given on surface. A_σ represents the area of the stress tensor, A_q represents the area of the heat flux vector, and A_η represents the area of the mass flux vector.

He's paper

In terms of $\varepsilon_{ij} = (u_{i,j} + u_{j,i})/2$, $\theta' = \theta_{,i}$ as well as $P' = P_{,i}$, it yields

$$\{\varepsilon\} = [B_1]\{u^e\}, \quad \{\theta'\} = [B_2]\{\theta^e\}, \quad \{P'\} = [B_2]\{P^e\}, \quad (24)$$

where $[B_1]$ is the strain matrix. In view of the coordinates x and y, $[B_1]$ and $[B_2]$ are

$$[B_1] = \begin{bmatrix} \frac{\partial N_1}{\partial x} & 0 & \frac{\partial N_2}{\partial x} & 0 & \cdots & \frac{\partial N_n}{\partial x} & 0 \\ 0 & \frac{\partial N_1}{\partial y} & 0 & \frac{\partial N_2}{\partial y} & \cdots & 0 & \frac{\partial N_n}{\partial y} \\ \frac{\partial N_1}{\partial y} & \frac{\partial N_1}{\partial x} & \frac{\partial N_2}{\partial y} & \frac{\partial N_2}{\partial x} & \cdots & \frac{\partial N_n}{\partial y} & \frac{\partial N_n}{\partial x} \end{bmatrix},$$
$$[B_2] = \begin{bmatrix} \frac{\partial N_1}{\partial x} & \frac{\partial N_2}{\partial x} & \cdots & \frac{\partial N_n}{\partial x} \\ \frac{\partial N_1}{\partial y} & \frac{\partial N_2}{\partial y} & \cdots & \frac{\partial N_n}{\partial y} \end{bmatrix}. \quad (25)$$

The variational form of Eq. (24) is

$$\delta\{\varepsilon\} = [B_1]\delta\{u^e\}, \quad \delta\{\theta'\} = [B_2]\delta\{\theta^e\}, \quad \delta\{P'\} = [B_2]\delta\{P^e\}. \quad (26)$$

In the absence of body force and inner heat source, considering the Lorentz force F_i, the virtual displacement principle of the generalized electromagneto-thermoelastic problems with diffusion can be formulated as

$$\int_V \begin{bmatrix} \delta\{\varepsilon\}^T\{\sigma\} - \rho T_0(\dot{S} + \tau_0\ddot{S})\delta\{\theta\} + \delta\{\theta'\}^T\{q + \tau_0\dot{q}\} \\ + \delta\{P'\}^T(\eta + \tau\dot{\eta}) - \delta\{P\}^T(\dot{C} + \tau\ddot{C}) \end{bmatrix}\mathrm{d}V$$
$$= \int_V \delta\{u\}^T(\{F\} - \rho\{\ddot{u}\})\mathrm{d}V + \int_{A_\sigma}\delta\{u\}^T\{\bar{T}\}\mathrm{d}A$$
$$+ \int_{A_q}\delta\theta\bar{q}\,\mathrm{d}A + \int_{A_\eta}\delta P\{\bar{\eta}\}\mathrm{d}A, \quad (27)$$

where $\{\bar{T}\}$ represents the traction vector, $\bar{q}$ the heat flux vector and $\{\bar{\eta}\}$ the mass flux vector, and the variables with a superimposed bar means they are given on surface.

Plagiarism in Finite Element Formulations (3)

Once the initial conditions and the boundary conditions are specified, the finite element equation in (32) can be solved directly in time domain. In the process of numerical calculation and finite element solution, the space domain and time domain are discrete. In the calculation, because the surface of OA is subjected to a thermal shock and a chemical potential shock, this part of the unit is divided in a more detailed way; the entire model is divided into 1535 units and 3222 nodes; similarly, the initial time step is set to $t = 3\times10^{-7}$; the variable threshold is set at $t = 1\times10^{-7}$, which ensures the accuracy and convergence and also saves a lot of calculated time.

Zhang's paper

Once the initial conditions and the boundary conditions are specified, the finite element equation in Eq. (28) can be solved directly in time domain.

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Plagiarism in Numerical Results and Discussions (1)

The schematic of the considered half-space as well as the applied loads on its bounding surface is shown in Figure 1(a). The bounding surface is assumed to be traction-free, and the thermal shock and the chemical potential shock applied on the bounding Surface have, respectively, the following form:

$$\theta = \theta_0 H(t) H(L - |y|), \qquad P = P_0 H(t) H(L - |y|), \tag{34}$$

where $H(\cdot)$ is the Heaviside unit step function and θ_0 and P_0 are constants.

Assume that the rotating half-space is initially at rest, so that the initial conditions are

$$u = v = \theta = P = 0 \quad \text{at } t = 0, \qquad \dot{u} = \dot{v} = \dot{\theta} = \dot{P} = 0 \quad \text{at } t = 0. \tag{35}$$

Due to the symmetries of geometrical shape and boundary conditions, the problem can be treated as a plane strain problem and only half of the half-space needs to be considered. The model for simulation is shown in Figure 1(b), where $OABC$ outlines the region for implementing the simulation and OD represents the region within which the thermal shock and the chemical potential shock are applied.

Zhang's paper

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Due to the symmetries of geometrical shape and boundary conditions, the problem can be treated as a plane-strain problem and only half of the half-space needs to be considered. The model for simulation is shown in Fig. 1(b), where $OABC$ outlines the region for implementing the simulation and OD represents the region within which the thermal shock and the chemical potential shock are applied. p_1, p_2 and p_3 are three prescribed points on the x-axis with the coordinate values $(0.5, 0)$, $(0.6, 0)$ and $(0.7, 0)$, respectively.

The boundary conditions of the problem are assumed to be

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Plagiarism in Numerical Results and Discussions (2)

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The calculations are carried out for three values of nondimensional times, namely, $t = 0.05$, $t = 0.1$, and $t = 0.15$.

The nondimensional temperature, displacement, stress, chemical potential, concentration, and induced magnetic field are illustrated in Figures 2–12, respectively, dropping the asterisk at the upper right corner of the nondimensional variables for convenience. It should be pointed out that wave reflection from any edges is excluded in the simulation.

Figures 2 and 3 show the distributions of the nondimensional temperature along *OA* and *OC*, respectively. In **Figure 2**, when the time t is given, the distance of the heat propagation in the x direction should be $x = v_h t$, where v_h is nondimensional heat wave velocity. When $\tau = 0.02$, we can achieve $v_h = 0.07$. The heat propagation in the x direction at the time $t = 0.5$, $t = 0.1$ is $x = 0.35$, $x = 0.7$ respectively. From **Figure 2** a distinct temperature step on thermal wave front distribution on *OA* can be readily seen, but it becomes indistinct along with the passage of time. In Figure 3, within $0 \le y \le 0.2$, the temperature keeps constant all along, which is consistent with the thermal boundary condition along *OD*. As shown in Figures 2 and 3, the temperature increases with the passage of time.

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In calculation, we specify $\tau_0 = 0.02$, $\tau = 0.2$, $T_0 = 293\,\mathrm{K}$, $\theta_0 = 1$, $P_0 = 1$, $L = OD = 0.2$, the dimensions along x-axis and y-axis are $L_x = 3.0$ and $L_y = 3.0$, respectively.

The calculations are carried out for three values of nondimensional times, namely, $t = 0.06$, $t = 0.08$ and $t = 0.1$. The nondimensional temperature, displacement, stress, chemical potential, concentration, induced magnetic field and the time histories of the nondimensional temperature, displacement, chemical potential as well as concentration of the three prescribed points are illustrated in Figs. 2–13, respectively, dropping the asterisk at the upper right corner of the nondimensional variables for convenience. It should be pointed out that wave reflection from any edges is excluded in the simulation.

Figures 2 and 3 show the distributions of the nondimensional temperature along *OA* and *OC*, respectively. In Fig. 3, within $0 \le y \le 0.2$, the temperature keeps constant all along, which is consistent with the thermal boundary condition along *OD*. As shown in Figs. 2 and 3, the temperature increases with the passage of time.

Plagiarism in Numerical Results and Discussions (3)

Zhang's paper

Figure 4 shows the distributions of the nondimensional horizontal displacement along *OA*. Due to the thermal shock, the parts of the half-space near the bounding surface expand toward the unconstrained direction, thus yielding negative displacement. It can be found that different parts on *OA* undergo different deformations. Some undergo expansion and some undergo compression, while the rest remain undisturbed, resulting in the displacement shift from negative to positive gradually. With the passage of time, the expansion parts enlarge and move inside dynamically, making the negative-positive region transform dynamically. We should be aware that the vertical displacement for *OA* is always zero because of the symmetries.

He's paper

Figure 4 shows the distributions of the nondimensional horizontal displacement along *OA*. Due to the thermal shock, the parts of the half-space near the bounding surface expand toward the unconstrained direction, thus yielding negative displacement. It can be found that different parts on *OA* undergo different deformations. Some undergo expansion, some undergo compression while the rest remain undisturbed, resulting in the displacement shifting from negative to positive gradually. With the passage of time, the expansion parts enlarge and move inside dynamically, making the negative–positive region transform dynamically. It should be made aware that the vertical displacement for *OA* is always zero because of the symmetries.

Plagiarism in Numerical Results and Discussions (4)

Figures 5 and 6 show the distributions of the nondimensional horizontal and vertical displacements on OC, respectively. As seen from Figure 5, the horizontal displacement on OC is negative, which means that OC undergoes thermal expansion deformation and moves toward the unconstrained direction. As shown in Figure 6, the vertical displacement along OC is positive. This can be interpreted as follows. Due to the symmetries, the vertical displacement of point "o" is always zero. This implies that point "o" can not be allowed to move up and down, which prevents all the other points on OC from moving downwards, thus leading to positive displacement. The vertical displacement on OC firstly goes up and then goes down. It can also be seen from Figures 5 and 6 that the magnitudes of the displacement increase with the passage of time.

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also be seen from Figs. 5 and 6 that the magnitudes of the displacement increase with the passage of time.

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Plagiarism in Numerical Results and Discussions (5)

Figure 7 shows the distributions of nondimensional stress σ_{xx} along OA. Due to the symmetries, the other two components of stress, namely, σ_{yy} and σ_{xy}, are always zero along OA. It can be observed that σ_{xx} is all negative, which is known as compressive stress.

Figures 8, 9, 10, and 11 show the distributions of nondimensional chemical potential and concentration along OA and OC, respectively. It can be observed that the speed of diffusive wave is larger than that of thermoelastic wave, which can be deduced by comparing the distance of diffusive wave traversing across the half-space with that of thermoelastic wave along the same direction for a given time.

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Zhang's paper

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Plagiarism in Numerical Results and Discussions (6)

Zhang's paper	He's paper
Figure 12 shows the distributions of the nondimensional induced magnetic field. Due to the mutual interaction between the applied external magnetic field and the elastic deformation, this results in an induced magnetic field in the half-space. As shown in Figure 12, the magnitude of h increases with the passage of time. It can be readily seen from Figures 2–12 that all the considered variables have a nonzero value only in a bounded region and the value vanishes outside this region, which is totally dominated by the nature of the finite speeds of thermoelastic wave and diffusive wave.	Figure 12 shows the distributions of the nondimensional induced magnetic field. Due to the mutual interaction between the applied external magnetic field and the elastic deformation, there results in an induced magnetic field in the half-space. As shown in Fig. 12, the magnitude of h increases with the passage of time.

Plagiarism in Concluding Remarks

Zhang's paper	He's paper
A two-dimensional generalized electromagnetothermoelastic problem with diffusion for a rotating half-space is studied in the context of the theory of generalized thermoelastic diffusion by means of finite element method. The nondimensional temperature, displacement, stress, chemical potential, concentration, and induced magnetic field are obtained. The results show that (1) all the considered variables have a nonzero value only in a bounded region and vanish identically outside this region, which is governed by the nature of the finite speeds of thermoelastic wave and diffusive wave; (2) the speed of diffusive wave is larger than that of thermoelastic wave; (3) rotation acts to decrease the magnitude of the real part of displacement, stress, and induced magnetic field and not to affect the magnitude of temperature, chemical potential, and concentration.	A two-dimensional generalized electromagneto-thermoelastic problem with diffusion for a half-space is studied in the context of the theory of generalized thermoelastic diffusion by means of finite element method. The nondimensional temperature, displacement, stress, chemical potential, concentration and induced magnetic field are obtained. The results show that: (i) all the considered variables have a nonzero value only in a bounded region and vanish identically outside this region, which is governed by the nature of the finite speeds of thermoelastic wave and diffusive wave, (ii) the speed of diffusive wave is larger than that of thermoelastic wave, (iii) the basic procedure presented here provides a feasible way to solve the dynamic response of generalized electromagneto-thermoelastic problems.

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正如我们一再强调的，阻止我们在社交媒体的文章，并不能阻止这些事实的传播。具体建议咨询一下另一位杰青。

[1] 双一流，国家杰青，把别人的文章搬过来再发了一遍，这次是谁?

[2] 10.1155/2014/964218

[3] 10.1142/S1758825112500469