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«___» _____ 2015.

Regulations on "I. Yakovlev Chuvash State Pedagogical University Bulletin. Series: Mechanics of a limit state"

Version 3.0

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Содержание

The regulations have been developed in compliance with the requirements of the Russian National Standard International Standards Organization 9004-2010 and are the document of the system of University quality management.

The regulations have been sustained with amendments and additions by the decision of the academic board d/d _____ (record # ____).

The amendments to this document are developed when there are amendments to the regulatory requirements on the authority of which the documents have been developed.

1. General Terms

1.1. The regulations determine the procedure of forming, financing and also the requirements for the typography of “I. Yakovlev Chuvash State Pedagogical University Bulletin. Series: Mechanics of a limit state” (hereinafter “the Bulletin”).

1.2. The Bulletin has been published since 2007. The founder is the Federal State-Funded Educational Institution of Higher Professional Education “I. Yakovlev Chuvash State Pedagogical University”.

1.3. The Bulletin is a subscription peer-reviewed serial scientific edition of I. Yakovlev Chuvash State Pedagogical University (hereinafter “the University”) for updating the Russian and foreign scientific community, post-graduate students and students on new scientific achievements in fundamental and applied sciences.

1.4. The Bulletin is in the list of peer-reviewed scientific editions in which the research results of theses for a doctor's and candidate’s degrees are to be published.

1.5. The Bulletin is indexed in the Russian Science Citation Index.

1.6. The Bulletin has The International Standard Serial Number (ISSN) which provides the information about the Bulletin in abstract periodicals.

1.7. The Bulletin is registered in the Federal Service for Supervision of Communications, Information Technology, and Mass Media.

2. Content, size, circulation and publication frequency

2.1. The Bulletin publishes articles on topical problems in Biological, Philological and Pedagogical Sciences. These articles are not to be published before and not to be submitted for publishing in other editions.

2.2. The Bulletin is published four times a year (once a quarter).

2.3. The maximum size of an issue is not to exceed 250 pages of 70x100/8 format, the circulation is minimum 500 copies.

3. Management and organisation of the Bulletin

3.1. The Editor-in-chief of the Bulletin is the Rector of the University, Executive Editor – Dr. Sci. Phys. & Math., Professor, Leading Research Fellow at the Institute for Problems in Mechanics of RAS, Radaev Uriy Nikolaevich, Deputy Executive Editor – Dr. Sci. Phys. & Math., Professor, Matchenco Nicolay Mihalovich, Maximova Lyudmila Anatolevna.

3.2. The editorial staff assemble the Bulletin, review the articles submitted to the editorial office. The members of the editorial staff can be Doctors or Candidates (by way of exception).

3.3. Organizational, editorial and technical work on the preparation of the Bulletin carry out responsible and Technical Secretary of the Bulletin.

3.4. The articles submitted for publication in the Bulletin are to meet the requirements for articles (Appendix 1). The editorial board reserves the right not to register the manuscripts that do not meet the requirements.

3.5. All the articles submitted undergo the obligatory review. The decision on publishing an article in this or that issue is made depending on the results of review.

4. Financing of the Bulletin

4.1. The Founder of the Bulletin performs financing the work on redaction, publishing and distribution of the Bulletin.

4.2. The source of funding of the Bulletin is extra-budgetary funds of the University.

Appendix 1

Requirements for articles to be published in "I. Yakovlev Chuvash State Pedagogical University Bulletin. Series: Mechanics of a limit state"

An example of an article in PDF and article template in the program Latex.

For the publication of scientific works in the issues of series of the journal «I. Yakovlev Chuvash State Pedagogical University Bulletin. Series: Mechanics of a limit state» articles that correspond to the scientific requirements, general trend of the series of the journal and articles that are able to interest sufficiently wide range of Russian and foreign scientific community are taken. Suggested in the article material should be **original**, not published earlier in other printed publications, written in the context of modern scientific literature and also contain evident **element of creation new knowledge**. All the presented articles undergo a checkout **in the program «Antiplagiat»** and are sent on independent (internal) peer review. Period of peer review is three month. The solution on publishing the article is taken by the editorial board on the basis of the peer review.

Periodicity - 4 issues a year.

TEXT OF THE ARTICLE

The article is presented in Russian or in English language in printed (size A4) and electronic (e-mail: predel21@mail.ru) variants.

Before the title of the article you should put UDC cipher http://teacode.com/online/udc.

Place of work, list of authors in alphabetical order (family name, name, patronymic name, place of work, index and address of place of work, academic degree, position, e-mail, mobile telephone), abstract, key words, reference list, should be presented in Russian and in English language.

The main text is recommended to be divided into subsections for comfort reading of the work and should contain in the end summary or basic obtained results. The inclusion of formulae in the title of article and text of short abstract is not permitted.

The volume of the article should not exceed 20 pages of typescript and be illustrated by not more than 5 figures and 5 tables. Coordinating typesize dimension is 11 points.

Captions to pictures should be placed under pictures and contain their short description and if possible explanation of the used symbols and shorthands. The indicator of the table should be placed at the right top of the table. The title of the table (as well as the table itself) should be centered along the width of the main text. Numeration of figures and tables should be through along the text of the article. It is not allowed to place in the text figures and tables before the appearance of reference on them in the text of the article.

The text of the article should be prepared by means of publishing system of LATEX2ε with the help of the style predel.sty.

Preparing of electronic variant of the article with the help of other means should be coordinated with the editorial staff in advance. At preparing the electronic variant of the article it is necessary to take into consideration the following recommendations.

a) at typesetting of the article it is necessary to distinguish the following punctuation marks and check sequences that correspond to them: single hyphen (“-”), double hyphen (“–”) and triple hyphen (“—”) . Single hyphen is used in compound words; double hyphen is recommended for the indication of the number range, and “double” family names; triple hyphen means dash;

b) use of only back quotes (“) is acceptable by means of check sequence \textquotedblright;

c) finding of two or more closing or opening brackets of one type is not acceptable. It is recommended to be careful with the balance of brackets;

d) use of the following commands of switching types: \rm, \it, \sl and standard types of the family AMS with the use of the following commands of switching types \mathbf, \mathcal, \mathfrak is allowed. The use of other types should be coordinated with the editorial staff in advance.

List of references is composed according to the proper order of citing and is situated in the end of the article and should be made in accordance with the GOST R. 7.05 – 2008. «Not more than 20 sources is allowed. References to the literature in the text are obligatory and are given in square brackets, for example» [14, p. 28]. References on foreign sources are given on the language of the original.

Citation is carried out by means of the command \cite with the corresponding mark. References on not published works are forbidden.

GRAPHIC ART

Supporting material (figures, tables, diagrams) is prepared by the standard means of LATEX2ε. Figures may also be prepared in any graphics editor and presented in the form of EPS. Electronic presentations of photos are allowed only in the form of EPS or TIFF with resolution not less than 600 dpi. In case of using non-standard style files the author must present the editorial staff necessary style files. Change of standard style files is forbidden.

On the diagrams the network (it is desirable to be square) with the indication of graduations should be marked. The recommended size of figures is 11-15 cm across and 5–15 cm along the vertical line. It is necessary to keep an eye on the exact fit of symbols in the text and in the figures and on the resemblance of types. Captions, blocking figures should be replaced by numbers or letterings and included in the picture captions. Picture captions themselves should be as short as possible. Editorial staff reserves the right to demand from the author more qualitative fulfillment of graphic matter.

FORMULAE

For mathematical notations standard and the most simple symbols are recommended to be used. It is not recommended to use indices from the letters of Russian alphabet. Vectors and tensors are performed in bold type.

The following is to be enclosed to the article:

a) a letter headed covering letter that writes publication of the article in the Bulletin does not infringe copyright; that the article never been published before, has not been and will not be submitted to any other editions; that the article meets the requirements of ublication Ethics; that the author consents to processing personal data;

b) an expert evidence that permits to publish the results of the research publicly and confirms that the article does not contain any classified information;

c) a referee report of an expert on the subject of the research – Doctor of Science, Professor;

d) post-graduate students are to submit a report from a research advisor and a Proof of Post-graduate Student Status that confirms pursuing state-subsidized post-graduate studies, states the apprenticeship and which is signed by the Head of the establishment. Articles are to be submitted in two formats: in printed version and in electronic version (on a CD). The electronic version is to coincide with the printed one.

Materials that do not meet these requirements will not be considered.

AN EXAMPLE OF THE ARTICLE SUBMITTED

УДК: 539.374

В. А. Ковалев, Ю. Н. Радаев

КОНЕЧНЫЕ ДЕФОРМАЦИИ И ЭКСТРАДЕФОРМАЦИИ ТЕРМОУПРУГОГО КОНТИНУУМА ВТОРОГО ТИПА С МИКРОСТРУКТУРОЙ

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Аннотация. Рассматривается новая теоретико-полевая модель нелинейного термоупругого континуума с ”тонкой“ (в частности, микрополярной) микроструктурой. Построение модели осуществляется в терминах 4-ковариантного полевого лагранжева формализма. ”Тонкая“ микроструктура континуума задается микроструктурными d-векторами и d-тензорами произвольно высоких рангов. d-тензоры вводятся в теоретико-полевую схему как экстра-полевые переменные (d-переменные). Микроструктурные векторные и тензорные экстра-полевые переменные могут быть подчинены уравнениям связей (кинематическим ограничениям). Указывается плотность вариационного интегрального функционала термоупругого действия и сформулирован соответствующий вариационный принцип наименьшего действия. При этом выполнен учет инерционности

микроструктурной”составляющей“ поля. Ковариантные уравнения термоупругого поля в континууме с микроструктурой получаются в канонической форме Эйлера—Лагранжа.

Ключевые слова: термоупругость, микроструктура, поле, экстра-поле, действие, ковариантность, закон сохранения, d-тензор, 4-ток, тензор энергии—импульса.

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FINITE STRAINS AND EXTRASTRAINS OF TYPE-II THERMOELASTIC CONTINUUM WITH FINE MICROSTRUCTURE

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Abstract. A new non-linear mathematical model of type-II thermoelastic continuum with fine microstructure is developed. The model is described in terms of 4-covariant field theoretical formalism. Fine microstructure is represented by d-vectors and d-tensors, playing role of extra field variables. A Lagrangian density for type-II thermoelastic continuum with fine microstructure is given and the least action principle is formulated. Virtual microstructural inertia is added to the considered action density. Corresponding 4-covariant field equations of type-II thermoelasticity are derived. Constitutive equations of type-II microstructural thermoelasticity are discussed. Variational symmetries of the thermoelastic action are used to formulate covariant conservation laws in a plane spacetime. Following the usual procedure for type-II micropolar thermoelastic Lagrangians functionally independent rotationally invariant arguments are obtained. A formal proof of the completness of the system of rotationally invariant arguments is given. An alternative approach of constructuing a complete system of independent rotationally invariant arguments is discussed. Objective forms of the Lagrangians satisfying the frame indifference principle are given. Those are derived by using extra strain vectors and tensors.

Keywords: thermoelasticity, microstructure, field, extra field, action, covariance, conservation law, d-tensor, 4-current, energy–momentum tensor.

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