Russian Article – XƎTEX

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Краткое изложение

We study the effects of warm water on the local penguin population. The major finding is that it is extremely difficult to induce penguins to drink warm water. The success factor is approximately $-e^{-i\pi} - 1$.

1 Russian Article – XƎTEX

This document illustrates the appearance of an article created with the shell **Russian Article – XƎTEX.** The shell produces typeset PDF documents similar in appearance to those created with the Standard LATEX Article shell.

The document class base file for this shell is `article.cls`. A number of class options are supported by this typesetting specification, including setting the paper size and the point size of the font used in the body of the document. To see the available class options, choose Typeset, choose Options and Packages, select the Class Options tab, and then click the Modify button.

The typesetting specification for this shell document uses these options and packages with the defaults indicated:

Options and Packages	Defaults
Document class options	Standard
Packages:	
amsmath	Standard
amsfonts	None
fontspec	None
xunicode	None
xltxtra	None

Additional specifications have been added to the document preamble.

2 Creating Documents in Russian

2.1 Typing

Typing in Russian is keybaord-dependent. Keyboard mapping for Russian is available when you install regional support in Windows 2000 or XP and is available automatically

in Windows Vista. Once the support is installed, you can change to the Russian keyboard from the Windows Control Panel or the Language bar and then type directly in Russian.

This shell uses the extended Times New Roman font available on Windows systems. You can specify any TrueType or OpenType font installed on your computer.

2.2 Typesetting

Typesetting documents in Russian requires X$_{\exists}$T$_E$X, an adaptation of T$_E$X available with T$_E$X Live, a free TeX/LaTeX distribution providing a comprehensive T$_E$X collection of T$_E$X programs, packages and fonts, including support for many languages.

T$_E$X Live 2007 is available from our webstore at http://www.mackichan.com/store. It is also available to download as a disk image from http://www.tug.org/texlive/acquire.html. If you download, you must know how to work with a downloaded `.iso` disk image or burn a CD.

IMPORTANT   To use X$_{\exists}$T$_E$X, you must install T$_E$X Live 2007 in the default directory using the default installation choices. The installation requires approximately 500 MB of disk space Also, you must follow the instructions below to edit the T$_E$X Live 2007 configuration file to add information about the typesetting files included with SWP and SW.

You can create typeset PDF documents in Russian. Typeset DVI documents in Russian are not available with X$_{\exists}$T$_E$X.

> **To typeset with X$_{\exists}$T$_E$X using SWP or SW Version 5.x**

1. Obtain T$_E$X Live 2007 from the MacKichan Software webstore or download it from http://www.tug.org/texlive/acquire.html.

2. Install T$_E$X Live 2007 using the default directories.

3. Using an ASCII editor, modify the TeX Live configuration file:

    (a) In the ASCII editor, open the file c:\TeXLive2007\texmf-var\web2c\texmf.cnf.

    (b) At any point in the file, add this line to the file, being careful to type forward slashes:

       SWTEX=c:/swp55/tcitex

       If you have an earlier version or the program is not installed in c:\swp55 (for SWP) or c:\sw55 (for SW), substitute the appropriate directory name.

       NOTE   A convenient spot for adding the new line is just before the line referenced in step 3c.

    (c) Find the following line:

       `TEXMF = {!!$TEXMFVAR,$TEXMFHOME,!!$TEXMFMAIN,!!$TEXMFLOCAL,!!$TEXMFDIST}`

    (d) Modify the line to read as follows:

       TEXMF = {!!$TEXMFVAR,$TEXMFHOME,!!$TEXMFMAIN,!!$TEXMFLOCAL,!!$TEXMFDIST,$SWTEX}

4. Save the changes to texmf.cnf.

5. Specify X$_{\exists}$T$_E$X as your PDF Formatter:

(a) Choose **Typeset** > **Expert Settings**.

(b) Select the **PDF Format Settings** tab.

(c) In the Select a formatter box, select **TeX Live 2007 XeTeX**.

　　If the XeTeX PDF option isn't available, create it:

　　　i. Choose **Add/Modify.**

　　　ii. In the box for Name for TeX to PDF Formatter, enter **TeX Live 2007 XeTeX.**

　　　iii. In the box for Executable filename, enter the location of the installed XeTeX executable file.
　　　　The default is c:/TeXLive2007/bin/win32/xelatex.exe.

　　　iv. In the box for Command line to invoke formatter, enter **%x "%f".**

　　　v. In the box for Display appearance, enter **XeTeX**.

　　　vi. Under Command Handling, check **Run in new command console**.

　　　vii. In the box for Character set, select **UTF8**.

　　　viii. Choose **OK** to return to the PDF Format Settings tab.

(d) Make sure the TeX Live 2007 XeTeX formatter is selected and choose **OK**.

6. Create your document with this shell and save it, specifying the **Portable LaTeX (*.tex)** file type and the **UTF8** character set.

7. Choose **Typeset** > **Print PDF** or **Typeset** > **Preview PDF** to typeset your document.

   IMPORTANT　TEX Live launches in a separate command prompt. To view the compilation process, click the icon that appears on the task bar. If the process yields compilation errors, you must click the icon to open the command prompt and respond to X$_{\exists}$TEX.

3　Using This Shell

The front matter of this shell has a number of sample entries that you should replace with your own. Replace the body of this document with your own text. You may delete all the text in this document to start with a blank document.

MacKichan Software, Inc., does not support changes to the typeset format of this shell and its associated formatting files (`article.cls`).

This document will become your new Russian Article–XeTeX shell if you modify it and export it as "Russian Article–XeTeX.shl" in the `Shells\International` directory.

3.1　Translations

This shell provides translations for typeset names like "Chapter" and the theorem-like environments:

Acknowledgement Благодарность

Algorithm Алгоритм

Assumption Предположение, Допущение
Axiom Аксиома
Case Случай
Claim Утверждение
Conclusion Заключение
Condition Условие
Conjecture Гипотеза, Предположение
Corollary Следствие
Criterion Критерий
Definition Определение
Example Пример
Exercise Упражнение
Lemma Лемма
Notation Обозначение
Problem Задача (проблема)
Proposition Теорема
Remark Замечание
Solution Решение
Summary Реферат
Theorem Теорема
Proof Доказательство
Contents Содержание, Оглавление
List of Figures Список иллюстраций
List of Tables Список таблиц
References Список литературы
Bibliography Библиография
Index Предметный указатель
Figure Рисунок
Table Таблица
Part Часть
Chapter Глава
Appendix Приложение
Abstract Краткое изложение

4 Sample Russian Text

ТЕМПЕРАТУРНАЯ ЗАВИСИМОСТЬ ЭНЕРГЕТИЧЕСКОЙ ЩЕЛИ
А. А. Абрикосов

Изучение термодинамики сверхпроводников мы начнём с вычисления температурной зависимости энергетической щели $\triangle(T)$. Подставляя в формулу (16.21) функцию Ферми и переходя к интегрированию по импульсам, получаем уравнение для определения

$\triangle$:

$$1 = \frac{g}{2}\int \frac{d^3p}{(2\pi\hbar)^3}\frac{1-2n_F(\varepsilon)}{\varepsilon} = \frac{g}{2}\nu(\mu)\int_0^{\hbar\omega_D}\frac{\tanh\left(\frac{\sqrt{\xi^2+\triangle^2}}{2T}\right)}{\sqrt{\xi^2+\triangle^2}}d\xi \qquad ((16.23))$$

Мы здесь выделили интегрирование по ξ, учли симметрию по отношению к $\xi \to -\xi$ и ввели плотность состояний $\nu(\mu) = p_0 m/\left(\pi^2\hbar^3\right)$ (мы всё время рассматриваем изотропную модель). При $T \to 0$ $\tanh \to 1$. Взяв интеграл, получаем

$$1 = \frac{g\nu(\mu)}{2}\ln\left(\frac{2\hbar\omega_D}{\triangle(0)}\right)$$

(предполагаем $g\nu(\mu) \ll 1$; при этом $\triangle \ll \hbar\omega_D$). Отсюда следует

$$\triangle(0) = 2\hbar\omega_D \exp\left(-\frac{2}{g\nu(\mu)}\right)$$

5 Features of This Shell

5.1 Subsection

Use the Section tag for major sections, and the Subsection tag for subsections.

5.1.1 Subsubsection

This is just some harmless text under a subsubsection.

Subsubsubsection This is just some harmless text under a subsubsubsection.

Subsubsubsubsection This is just some harmless text under a subsubsubsubsection.

5.2 Tags

You can apply the logical markup tag *Emphasized*.

You can apply the visual markup tags **Bold**, *Italics*, Roman, Sans Serif, Slanted, Small Caps, and `Typewriter`.

You can apply $\mathbb{BLACKBOARD\ BOLD}$, $\mathcal{CALLIGRAPHIC}$, and $\mathfrak{fraktur}$, the special mathematics-only tags. Note that blackboard bold and calligraphic are correct only when applied to uppercase letters A through Z.

You can apply the size tags tiny, scriptsize, footnotesize, small, normalsize, large, Large, LARGE, huge and Huge.

This is a Body Math paragraph. Each time you press the Enter key, Scientific WorkPlace switches to mathematics mode. This is convenient for carrying out "scratchpad" computations.

Following is a group of paragraphs marked as Short Quote. This environment is appropriate for a short quotation or a sequence of short quotations.

The only thing we have to fear is fear itself. *Franklin D. Roosevelt,* Mar. 4, 1933

Ask not what your country can do for you; ask what you can do for your country. *John F. Kennedy,* Jan. 20. 1961

There is nothing wrong with America that cannot be cured by what is right with America. *William J. "Bill" Clinton,* Jan. 21, 1993

The Long Quotation tag is used for quotations of more than one paragraph. Following is the beginning of *Alice's Adventures in Wonderland* by Lewis Carroll:

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversation?'

So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

There was nothing so very remarkable in that; nor did Alice think it so very much out of the way to hear the Rabbit say to itself, 'Oh dear! Oh dear! I shall be late!' (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but when the Rabbit actually took a watch out of its waistcoat-pocket, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after it, and fortunately was just in time to see it pop down a large rabbit-hole under the hedge.

In another moment down went Alice after it, never once considering how in the world she was to get out again.

5.3   Mathematics and Text

Let H be a Hilbert space, C be a closed bounded convex subset of H, T a nonexpansive self map of C. Suppose that as $n \to \infty$, $a_{n,k} \to 0$ for each k, and $\gamma_n = \sum_{k=0}^{\infty} (a_{n,k+1} - a_{n,k})^+ \to 0$. Then for each x in C, $A_n x = \sum_{k=0}^{\infty} a_{n,k} T^k x$ converges weakly to a fixed point of T.

The numbered equation

$$u_{tt} - \Delta u + u^5 + u\,|u|^{p-2} = 0 \text{ in } \mathbf{R}^3 \times [0, \infty[\tag{1}$$

is automatically numbered as equation 1.

5.4   List Environments

You can create numbered, bulleted, and description lists using the Item Tag popup list on the Tag toolbar.

1. List item 1

2. List item 2

    (a) A list item under a list item.

       The typeset style for this level is different than the screen style. The screen shows a lower case alphabetic character followed by a period while the typeset style uses a lower case alphabetic character surrounded by parentheses.

    (b) Just another list item under a list item.

       i. Third level list item under a list item.

         A. Fourth and final level of list items allowed.

- Bullet item 1

- Bullet item 2

    – Second level bullet item.

       * Third level bullet item.

         · Fourth (and final) level bullet item.

Description List Each description list item has a term followed by the description of that term. Double click the term box to enter the term, or to change it.

Bunyip Mythical beast of Australian Aboriginal legends.

5.5 Theorem-like Environments

The following theorem-like environments (in alphabetical order) are available in this style.

Благодарность 1 *This is an acknowledgement*

Алгоритм 2 *This is an algorithm*

Аксиома 3 *This is an axiom*

Случай 4 *This is a case*

Утверждение 5 *This is a claim*

Заключение 6 *This is a conclusion*

Условие 7 *This is a condition*

Гипотеза, Предположение 8 *This is a conjecture*

Следствие 9 *This is a corollary*

Критерий 10 *This is a criterion*

Определение 11 *This is a definition*

Пример 12 *This is an example*

Упражнение 13 *This is an exercise*

Лемма 14 *This is a lemma*

Доказательство. This is the proof of the lemma. ∎

Обозначение 15 *This is notation*

Задача (проблема) 16 *This is a problem*

Теорема 17 *This is a proposition*

Замечание 18 *This is a remark*

Решение 19 *This is a solution*

Реферат 20 *This is a summary*

Теорема 21 *This is a theorem*

5.6 Citations

The references that follow this section automatically generate a References section heading. It has no relationship to the previous text, but can be used to show sample citations such as [5] and [6]. The typesetting specification determines the appearance of each citation and the References section. If you want multiple citations to appear in a single grouping you must type all of the citation keys inside a single citation, separating each with a comma. Here is an example: [3, 6, 9].

Список литературы

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[2] C. Blyth, *Some probability paradoxes in choice from among random alternatives*, J. Amer. Statist. Assoc. **67** (1972), 366–373.

[3] Chang Li-chien, *On the maximin probability of cyclic random inequalities*, Scientia Sinica **10** (1961), 499–504.

[4] Marquis de Condorcet, *Essai sur l'application de l'analyse à la probabilité des décisions rendues à la pluralité des voix*, Paris (1785).

[5] N. Dunford and J. Schwartz, *Functional Analysis*, v. 2, John Wiley and Sons, New York, 1963.

[6] W. W. Funkenbusch, *A gaming wheel based on cyclic advantage in symbol choice*, The Gambling Papers, Vol. XIII (1982), 68–83 University of Nevada, Reno.

[7] M. Gardner, *The paradox of the nontransitive dice and the elusive principle of indifference*, Scientific American **223** (1970), 110–114.

[8] M. Gardner, *On the paradoxical situations that arise from nontransitive relations*, Scientific American **231** (1974), 120–125.

[9] W. W. Funkenbusch and Saari, D. G., *Preferences among preferences or nested cyclic stochastic inequalities*, Congr. Numer. **39** (1983), 419–432.

[10] M. Struwe, *Semilinear wave equations*, Bull. Amer. Math. Soc. **26** (1992), 53-85.

[11] W.P. Thurston, *Geometry and topology of three manifolds*, Lecture notes, Princeton Univ., NJ, 1979.

A   The First Appendix

The appendix fragment is used only once. Subsequent appendices can be created using the Section Section/Body Tag.