DEMONSTRATION OF CAPABILITIES OF STYLE FILE FOR "PHYSICS OF EXTREME STATES OF MATTER—2011" COMPENDIUM

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Introduction. The size of the paper—not more than 3 pages in the current document format, the size of invited paper—up to 5 pages. Further you can find recommendations how to work with the style file and examples of symbols, formulas, figures, tables and references.

Symbols. Please pay attention to the symbols which have a special meaning in LaTeX, especially the percent sign (%). If you don't place the backslash (\) sign before it, all symbols up to the end of line or, even worse, up to the end of paragraph will be commented out. Below you will find how to use several widespread symbols:

- half-circle (hyphen);
- 2–3 times more (en-dash, use it between digits);
- yes—or no? (em-dash, please note that unlike the Russian style the spaces before and after em-dash are omitted);
- 10% more;
- \$200;
- ©JIHT RAS;
- temperature is 25°C;
- experiment No. 2;
- "cited expression";
- concentration is $\sim 10^{18}$ cm^{-3};
- lattice constant is 4.05 Å.

Formulas. You can use formulas in the text of paper: $x^2 + y^2 = z^2$. You can type something more complex: $\sin^2 x + \cos^2 x = 1$ or $\alpha_P \equiv \rho^{-1}(\partial\rho/\partial T)_P$. If you need to include text inside the formula use the *text* command: $\rho_{\text{sample}} = 5$ g/cm^3.

Even more complex equations can be formatted in display style:

$$\frac{dp_{ik}}{dt} = -\Gamma\frac{\partial F}{\partial p_{ik}} + \frac{\partial}{\partial x_l}\left(\mu\frac{\partial p_{ik}}{\partial x_l}\right).$$

If you need to number the equation and refer to it afterwards use the environment *equation* and the command *label*:

$$D_{0t}^{2-\alpha}u(x,\eta) - c^2 u_{xx} = F(x,t). \tag{1}$$

In this case you can refer to this equation in the text: from equation (1) we can conclude, that ... Please note the parentheses around the command *ref*. Don't forget that you should compile the text twice after you add new or edit old references.

If an equation is too long and can't be fitted into the column of text, you can use the environment *multline*. The first line of the formula is aligned left, the last is aligned right, the rest are centered.

$$\delta E_{sh} = \frac{\hbar}{\pi}\sum_{s=1}^{\infty}\frac{(-1)^s}{s^2}\left\{\frac{\cos[s(S_\mu^0/\hbar - \gamma_\mu^+)]}{T_\mu^0 - \hbar d\gamma_\mu^+/d\mu} + \right.$$
$$\left. + \frac{\cos[s(S_\mu^0/\hbar - \gamma_\mu^-)]}{T_\mu^0 - \hbar d\gamma_\mu^-/d\mu}\right\}. \tag{2}$$

Systems of equations, matrices, diagrams, structural chemical formulas can be created with the help of special commands and environments. You can learn more about it by reading any LaTeX manual LaTeX (see, for example, [1]).

Figures. Figures in EPS (Encapsulated Postscript) format can be used in the text of your paper. There are many ways of conversion to this format; many programs can export graphics into it. In particular, you can try Corel Draw (any version), Microcal Origin (version 7 or higher), Adobe Photoshop, Gnuplot and others. The size of a PostScript-file is strongly dependent on the way of its creation. Thus, if the original figure is in vector format, then the size of the corresponding PostScript-file will be small, about several kilobytes. If the original file is in raster format, the size of the PostScript-file may reach hundreds of megabytes! To avoid such sizes please diminish the size of your raster files. For example, if your figure is 8 cm width then the maximal number of points across for black and white pictures should not exceed 2400 (corresponding resolution is 300 dpi), for photos—1600 (resolution 200 dpi). As we do not plan to use color printing please convert your graphs and diagrams into black and white format, and photos—into grayscale format. The figure should be placed into the same directory with your tex-file. Here we include a figure to the text of this paper (Fig. 1).

The figure itself is included by the command *includegraphics*, after which the width of the figure is placed in square brackets (in this case the width is calculated using the known width of the column, the height is calculated automatically), and then you should put the name of file in curly braces. ATTENTION: to avoid problems please use only lower case letters in the names of files! The figure can appear anywhere in the text, for example, in the beginning of next page. In part you can control this process using different combinations of commands !, h, t, b, which mean, correspondingly: place immediately, place as close to this place as possible, place at the top of the column, place at the bottom of the column. In this particular case the figure, most likely, will be placed very close to its location in the text. Please pay attention to the commands *label* and *caption*: *label* assigns a unique label to the figure (with this label you can refer to this figure), *caption* defines the caption of the figure. Figures are numbered automatically. This is
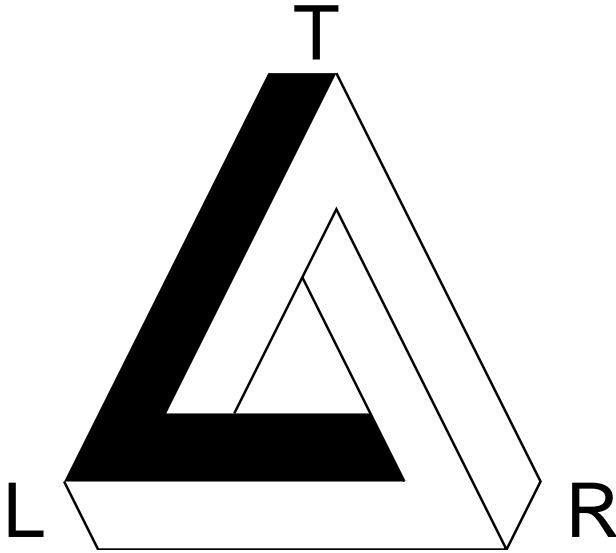
Figure 1. Test figure.

an example of a reference to the figure: in Fig. 1 we can see, that... (please pay attention to the three dots sign)

Similar figures can be placed one above the other with one and the same caption (Fig. 2). You can now refer to this figure: from Fig. 2 one can conclude, that...

At the worst case, if the figure is significantly wider than the column width, it can be placed to occupy the whole width of text. To do this use the environment *figure** (Fig. 3).

The wide figure, most likely will appear in the beginning of next page or even after the end of the paper. In this case move the *figure** environment closer to the beginning of the paper.

Using tables. You can place a table into your paper. To create a table use the environment *tabular*. For detailed description of this environment use any LaTeXmanual (see, for example, [1]). Below you can find an example of simple table.

Table 1. My table

Phase Ca	ρ, 10^{-5} Ohm·cm	P, GPa	T, K	$1/V$, g/cm^3
bcc Ca	1.20	14	810	2.346

Reference to the table looks the same way as reference to the figure. For example, in Table 1 we've collected some data.

If a table is too wide, you can try the environment *table**. In this case the table will occupy the whole width of text; most likely it will be printed in the beginning of next page.

References. References are numbered automatically. Here are some examples of references: [1–11]. Please note that inside the command *cite* you should list all references which you want to show, LaTeX will automatically sort and squeeze the list. In other words, you should form this list by yourself, inserting manu-
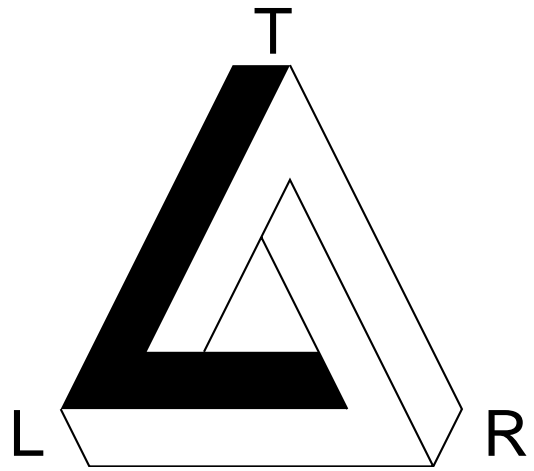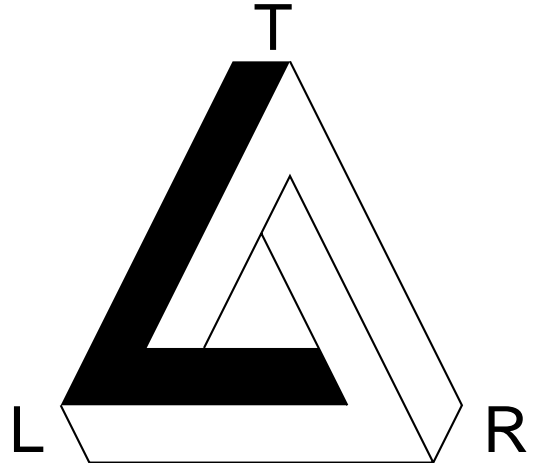

Figure 2. Similar figures.

ally the hyphen sign between the first and last references. Look, for example to the result of compilation of the following list of references: [2, 4–6]. In this command the references are given in order opposite to the list of references in the *thebibliography* environment, but nevertheless, after compilation the list becomes sorted and squeezed. After adding or deleting references you should recompile your paper twice.

In the list of references you should strictly follow the examples below. Please pay attention to the format of references to journals [2–5, 10], books [6, 7], and also to articles in compendiums [8, 9, 11]. To save some space it is permitted to shorten the list of authors of the cited work, e.g. [10] instead of [2], [11] instead of [8].

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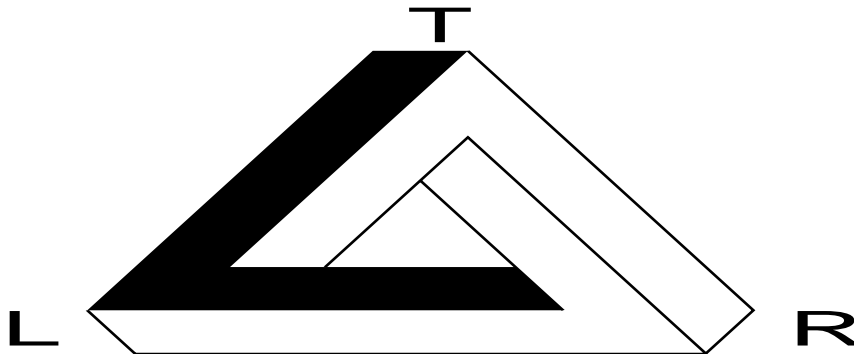4. Saumon D., Chabrier G. // Phys. Rev. A. 1992. V. 46. P. 2084.

Figure 3. Figure occupies the full width of text.

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