eqexpl v. 1.1.1

Konstantin Morenko

June 17, 2022

The package uses semantic versioning.

1 The aim of the package

The package was developed as an answer to the question on tex.stackexchange.com

The package was developed in order to give the tool to make the «perfect» explanation for equations, not just the enumeration.

This package allows to describe equation's variables in unified manner through the document.

2 Similar packages

Nomencl: http://ctan.org/pkg/nomencl

3 Contributors

Konstantin Morenko me@konstantin-morenko.ru

The package is currently hosted on GitHub: https://github.com/konstantin-morenko/latex-equation-explanation

4 Architecture

The list consist of few lengths:

- width of «intro» section (default is empty, 0pt);
- width of spaces between elements (default is 2mm);
- width of item block (default is 5mm);
- width of separator (default is '—');
- the rest of the width of the text block (used to align left side of the explanation text).

5 Usage

First, include the package into preamble with

```
\usepackage{eqexpl}
```

Then write an equation and describe the variables

$$E = mc^2 \tag{1}$$

E — equivalent energy
m — mass
c — speed of light ($c \approx 3 \times 10^8 m/s$)

using

```
\begin{equation}
  E = m c^2
\end{equation}
\begin{eqexpl}
\item{$E$} equivalent energy
\item{$m$} mass
\item{$c$} speed of light ($ c \approx 3 \times 10^8 m/s$)
\end{eqexpl}
```

6 Configure and examples

6.1 Test list

This list is used for next examples:

U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.2 eqexplSetSpace

Set `\eqexplSetSpace{0mm}`

U—voltage at the section, V;
Rs—total section resistance, Ohm.
$Very^{46}$—very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set `\eqexplSetSpace{}` (default 2mm)

U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \eqexplSetSpace`{10mm}`

U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.3 eqexplSetIntro

Set \eqexplSetIntro`{where}`

where U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \eqexplSetIntro`{in this equation}`

in this equation U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.4 eqexplSetDelim

Set \eqexplSetDelim`{---}` (default)

U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \eqexplSetDelim`{=}`

U = voltage at the section, V;
Rs = total section resistance, Ohm.
$Very^{46}$ = very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set `\eqexplSetDelim{$\to$}`

U → voltage at the section, V;
Rs → total section resistance, Ohm.
$Very^{46}$ → very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.5 eqexplSetItemWidth

Set `\eqexplSetItemWidth{5mm}` (default)

U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set `\eqexplSetItemWidth{10mm}`

U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.6 Item width for 'begin-end' block

When we have a long variable name (for example `very-very-long`), it could lead us to overhelming the variable name as in the example below

$long$ — just variable
$very - long$ — just variable
$very - very - long$ — just variable

User can set a parameter to the specific environment to use custom item width for current block in opposition to setting it before block to new value and unsetting it to default after the end of the block. For this purpose use `\begin{eqexpl}[width]`.

Set `\begin{eqexpl}[10mm]`

$long$ — just variable
$very - long$ — just variable
$very - very - long$ — just variable

Test for backing to default in next block
$long$ — just variable
$very - long$ — just variable
$very - very - long$ — just variable

Set `\begin{eqexpl}[20mm]`
$long$ — just variable
$very - long$ — just variable
$very - very - long$ — just variable

Test for backing to default in next block
$long$ — just variable
$very - long$ — just variable
$very - very - long$ — just variable

6.7 eqexplItemAlign

Set `\eqexplSetItemAlign{r}` (default)
U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set `\eqexplSetItemAlign{l}`
U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set `\eqexplSetItemAlign{c}`
U — voltage at the section, V;
Rs — total section resistance, Ohm.
$Very^{46}$ — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.8 Custom delimiter for individual items

Setting `\item{U}[=]`... and `\item[$\to$]{Rs}`....

U = voltage at the section, V;

Rs $\to$ total section resistance, Ohm.

$Very^{46}$ $\propto$ very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;