

The **bigints** package

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1 Introduction

This package (v1.1) *helps you to* write big integrals when needed. For example, you may want to write standard integrals before a matrix, but if you find them too small, you can use bigger integrals thanks to this package.

2 Use

2.1 Loading the Package

To *load the package*, please use

```
\usepackage{bigints}
```

Please note that this package loads the package ‘`amsmath`.’ Consequently, you do not need to load `amsmath` after having called `bigints`.

2.2 Available Options

The set of options is currently empty.

3 Examples

3.1 Possible Calls

Possible function calls are listed at Table 1.

| Integral's command | Standard command | Integral's command's output |
|---------------------------|------------------|-----------------------------|
| <code>\bigint</code> | \int | \int |
| <code>\bigints</code> | \int | \int |
| <code>\bigintss</code> | \int | \int |
| <code>\bigintsss</code> | \int | \int |
| <code>\bigintssss</code> | \int | \int |
| <code>\bigoint</code> | \oint | \oint |
| <code>\bigoints</code> | \oint | \oint |
| <code>\bigointss</code> | \oint | \oint |
| <code>\bigointsss</code> | \oint | \oint |
| <code>\bigointssss</code> | \oint | \oint |

Table 1: Possible calls of this package.

3.2 Practical Examples

3.2.1 Matrices With Five Rows

Compare

$$\int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \\ -m+n \\ m-n \end{pmatrix} dt \quad \text{to} \quad \int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \\ -m+n \\ m-n \end{pmatrix} dt.$$

To achieve

$$\int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \\ -m+n \\ m-n \end{pmatrix} dt$$

you simply need to use `\bigint` at the place of `\int` before the matrix.

3.2.2 Matrices With Four Rows

Compare

$$\int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \\ -m+n \end{pmatrix} dt \quad \text{to} \quad \int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \\ -m+n \end{pmatrix} dt.$$

To achieve

$$\int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \\ -m+n \end{pmatrix} dt$$

you simply need to use `\bigintts` at the place of `\int` before the matrix.

3.2.3 Matrices With Three Rows

Compare

$$\int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \end{pmatrix} dt \quad \text{to} \quad \int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \end{pmatrix} dt.$$

To achieve

$$\int_{t_i}^{t_f} \begin{pmatrix} \frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \\ f-gh \\ -i+jk+l \end{pmatrix} dt$$

you simply need to use `\biginttss` at the place of `\int` before the matrix.

3.2.4 Matrices With Two Rows

Compare

$$\int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{dW_s}{dt}}{f-gh} \right) dt \quad \text{to} \quad \int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{dW_s}{dt}}{f-gh} \right) dt.$$

To achieve

$$\int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{dW_s}{dt}}{f-gh} \right) dt$$

you simply need to use `\bigintsss` at the place of `\int` before the matrix.

3.2.5 Matrices With One Row

Compare

$$\int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \right) dt \quad \text{to} \quad \int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \right) dt.$$

To achieve

$$\int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{dW_s}{dt}}{k} \right) dt$$

you simply need to use `\bigintssss` at the place of `\int` before the matrix. This is here a matter of taste, as both symbols are typographically acceptable.

The same concept can be used for integrals on closed contours, such as the standard `\oint`. You simply need to use `\bigoint`, `\bigoints`, `\bigointss`, `\bigointsss` and `\bigointssss`.

4 Implementation

Here is the code of `bigints.sty`:

```
1 %% This is file 'bigints.sty' v1.1 by Mericiadri Luca.
3 \NeedsTeXFormat{LaTeX2e}
4 \ProvidesPackage{bigints}[2010/02/25 Writing big integrals]
5 \PackageInfo{bigints}{This is Bigints by Mericiadri Luca.}
7 \RequirePackage{amsmath}[2000/07/18]
9
10 \makeatletter
11 \newcommand{\bigint}{\@ifnextchar_{\@bigintsub\@bigintnosub}
12 \def\@bigintsub_{#1}{\def\@int@subscript{#1}\@ifnextchar_{\@bigintsubsub\@bigintsubnosub}
13 \def\@bigintsubsub_{#1}{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle\kern-0.35em%
14 \@int@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
15 \def\@bigintsubnosub{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle\@int@subscript$}}}\nolimits}
16 \def\@bigintnosub_{\@ifnextchar_{\@bigintnosubsub\@bigintnosubnosub}
17 \def\@bigintnosubsub_{#1}{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
18 \def\@bigintnosubnosub{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
19 \newcommand{\bigints}{\@ifnextchar_{\@bigintssub\@bigintssnosub}
20 \def\@bigintssub_{#1}{\def\@int@subscript{#1}\@ifnextchar_{\@bigintssubsub\@bigintssubnosub}
21 \def\@bigintssubsub_{#1}{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle\kern-0.35em%
22 \@int@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
23 \def\@bigintssubnosub{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle\@int@subscript$}}}\nolimits}
24 \def\@bigintssnosub_{\@ifnextchar_{\@bigintssnosubsub\@bigintssnosubnosub}
25 \def\@bigintssnosubsub_{#1}{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
26 \def\@bigintssnosubnosub{\mathop{\text{\huge$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
27 \newcommand{\bigintss}{\@ifnextchar_{\@bigintsssub\@bigintssnosub}
28 \def\@bigintsssub_{#1}{\def\@int@subscript{#1}\@ifnextchar_{\@bigintsssubsub\@bigintsssubnosub}
29 \def\@bigintsssubsub_{#1}{\mathop{\text{\LARGE$\int_{\text{\normalize$\scriptstyle\kern-0.25em%
30 \@int@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
31 \def\@bigintsssubnosub{\mathop{\text{\LARGE$\int_{\text{\normalize$\scriptstyle\@int@subscript$}}}\nolimits}
32 \def\@bigintssnosubsub_{\@ifnextchar_{\@bigintssnosubsubsub\@bigintssnosubsubnosub}
33 \def\@bigintssnosubsubsub_{#1}{\mathop{\text{\LARGE$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
34 \def\@bigintssnosubsubnosub{\mathop{\text{\LARGE$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
35 \newcommand{\bigintsss}{\@ifnextchar_{\@bigintsssbb\@bigintsssbnosub}
36 \def\@bigintsssbb_{#1}{\def\@int@subscript{#1}\@ifnextchar_{\@bigintsssbbsub\@bigintsssbbnosub}
37 \def\@bigintsssbbsub_{#1}{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle\kern-0.20em%
38 \@int@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
39 \def\@bigintsssbbnosub{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle\@int@subscript$}}}\nolimits}
40 \def\@bigintsssbnosub_{\@ifnextchar_{\@bigintsssbnosubsub\@bigintsssbnosubnosub}
41 \def\@bigintsssbnosubsub_{#1}{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
42 \def\@bigintsssbnosubnosub{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
43 \newcommand{\bigintssss}{\@ifnextchar_{\@bigintssssbb\@bigintssssbnosub}
44 \def\@bigintssssbb_{#1}{\def\@int@subscript{#1}\@ifnextchar_{\@bigintssssbbsub\@bigintssssbbnosub}
45 \def\@bigintssssbbsub_{#1}{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle\kern-0.15em%
46 \@int@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
47 \def\@bigintssssbbnosub{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle\@int@subscript$}}}\nolimits}
48 \def\@bigintssssbnosub_{\@ifnextchar_{\@bigintssssbnosubsub\@bigintssssbnosubnosub}
49 \def\@bigintssssbnosubsub_{#1}{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
50 \def\@bigintssssbnosubnosub{\mathop{\text{\Large$\int_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
51
52 \newcommand{\bigoint}{\@ifnextchar_{\@bigointsub\@bigointnosub}
53 \def\@bigointsub_{#1}{\def\@oint@subscript{#1}\@ifnextchar_{\@bigointsubsub\@bigointsubnosub}
54 \def\@bigointsubsub_{#1}{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle\kern-0.35em%
55 \@oint@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
56 \def\@bigointsubnosub{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle\@oint@subscript$}}}\nolimits}
57 \def\@bigointnosub_{\@ifnextchar_{\@bigointnosubsub\@bigointnosubnosub}
58 \def\@bigointnosubsub_{#1}{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
59 \def\@bigointnosubnosub{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
60 \newcommand{\bigointss}{\@ifnextchar_{\@bigointssbb\@bigointssbnosub}
61 \def\@bigointssbb_{#1}{\def\@oint@subscript{#1}\@ifnextchar_{\@bigointssbbsub\@bigointssbbnosub}
62 \def\@bigointssbbsub_{#1}{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle\kern-0.35em%
63 \@oint@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
64 \def\@bigointssbbnosub{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle\@oint@subscript$}}}\nolimits}
65 \def\@bigointssbnosub_{\@ifnextchar_{\@bigointssbnosubsub\@bigointssbnosubnosub}
66 \def\@bigointssbnosubsub_{#1}{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
67 \def\@bigointssbnosubnosub{\mathop{\text{\huge$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
68 \newcommand{\bigointsss}{\@ifnextchar_{\@bigointsssbb\@bigointsssbnosub}
69 \def\@bigointsssbb_{#1}{\def\@oint@subscript{#1}\@ifnextchar_{\@bigointsssbbsub\@bigointsssbbnosub}
70 \def\@bigointsssbbsub_{#1}{\mathop{\text{\LARGE$\oint_{\text{\normalize$\scriptstyle\kern-0.25em%
71 \@oint@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
72 \def\@bigointsssbbnosub{\mathop{\text{\LARGE$\oint_{\text{\normalize$\scriptstyle\@oint@subscript$}}}\nolimits}
73 \def\@bigointsssbnosub_{\@ifnextchar_{\@bigointsssbnosubsub\@bigointsssbnosubnosub}
74 \def\@bigointsssbnosubsub_{#1}{\mathop{\text{\LARGE$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
75 \def\@bigointsssbnosubnosub{\mathop{\text{\LARGE$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
76 \newcommand{\bigointssss}{\@ifnextchar_{\@bigointssssbb\@bigointssssbnosub}
77 \def\@bigointssssbb_{#1}{\def\@oint@subscript{#1}\@ifnextchar_{\@bigointssssbbsub\@bigointssssbbnosub}
78 \def\@bigointssssbbsub_{#1}{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle\kern-0.20em%
79 \@oint@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
80 \def\@bigointssssbbnosub{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle\@oint@subscript$}}}\nolimits}
81 \def\@bigointssssbnosub_{\@ifnextchar_{\@bigointssssbnosubsub\@bigointssssbnosubnosub}
82 \def\@bigointssssbnosubsub_{#1}{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
83 \def\@bigointssssbnosubnosub{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
84 \newcommand{\bigointsssss}{\@ifnextchar_{\@bigointsssssbb\@bigointsssssbnosub}
85 \def\@bigointsssssbb_{#1}{\def\@oint@subscript{#1}\@ifnextchar_{\@bigointsssssbbsub\@bigointsssssbbnosub}
86 \def\@bigointsssssbbsub_{#1}{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle\kern-0.15em%
87 \@oint@subscript$}}\text{\normalize$\scriptstyle#1$}}}\nolimits}
88 \def\@bigointsssssbbnosub{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle\@oint@subscript$}}}\nolimits}
89 \def\@bigointsssssbnosub_{\@ifnextchar_{\@bigointsssssbnosubsub\@bigointsssssbnosubnosub}
90 \def\@bigointsssssbnosubsub_{#1}{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
91 \def\@bigointsssssbnosubnosub{\mathop{\text{\Large$\oint_{\text{\normalize$\scriptstyle#1$}}}\nolimits}
92
93 \makeatother
```

`\relax`

5 Limitations

This package has currently no limitation.

6 Remarks

Not yet.

7 Bugs

Not yet.

8 Version History

1. v1.0: package is introduced to the L^AT_EX world,
2. v1.1: new commands (`\bigoint`, `\bigoints`, `\bigointss`, `\bigointsss` and `\bigointssss`) are available.

9 Contact

If you have any question concerning this package (limitations, bugs, ...), please contact me at Luca.Merciadri@student.ulg.ac.be.

10 Credits

Thanks to `pg` for his related trick, in the message on

<http://www.les-mathematiques.net/phorum/read.php?10,472951>.

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