The **bigints** package

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February 25, 2010

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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
\bigint	$\int$	$\bigint$
\bigints	$\int$	$\bigints$
\bigintss	$\int$	$\bigintss$
\bigintsss	$\int$	$\bigintsss$
\bigintssss	$\int$	$\bigintssss$
\bigoint	$\oint$	$\bigoint$
\bigoints	$\oint$	$\bigoints$
\bigointss	$\oint$	$\bigointss$
\bigointsss	$\oint$	$\bigointsss$
\bigointssss	$\oint$	$\bigointssss$

Table 1: Possible calls of this package.

3.2 Practical Examples

3.2.1 Matrices With Five Rows

Compare

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

To achieve

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

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

3.2.2 Matrices With Four Rows

Compare

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

To achieve

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

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

3.2.3 Matrices With Three Rows

Compare

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

To achieve

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

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

3.2.4 Matrices With Two Rows

Compare

$$\int_{t_i}^{t_f} \left(\begin{matrix} \frac{a(1-b)-cd-e\frac{\mathrm{d}W_s}{\mathrm{d}t}}{k} \\ f-gh \end{matrix} \right) \mathrm{d}t \quad \text{to} \quad \int_{t_i}^{t_f} \left(\begin{matrix} \frac{a(1-b)-cd-e\frac{\mathrm{d}W_s}{\mathrm{d}t}}{k} \\ f-gh \end{matrix} \right) \mathrm{d}t.$$

To achieve

$$\boxed{\int_{t_i}^{t_f} \left(\begin{matrix} \frac{a(1-b)-cd-e\frac{\mathrm{d}W_s}{\mathrm{d}t}}{k} \\ f-gh \end{matrix} \right) \mathrm{d}t}$$

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

3.2.5 Matrices With One Row

Compare

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

To achieve

$$\boxed{\int_{t_i}^{t_f} \left(\frac{a(1-b)-cd-e\frac{\mathrm{d}W_s}{\mathrm{d}t}}{k} \right) \mathrm{d}t}$$

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`:

```
%% This is file `bigints.sty' v1.1 by Merciadri Luca.

\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{bigints}[2010/25/02 Writing big integrals]
\PackageInfo{bigints}{This is Bigints by Merciadri Luca.}

\RequirePackage{amsmath}[2000/07/18]


\makeatletter
\newcommand{\bigint}{\@ifnextchar_\@bigintsub\@bigintnosub}
\def\@bigintsub_#1{\def\@int@subscript{#1}\@ifnextchar^\@bigintsubsup\@bigintsubnosup}
\def\@bigintsubsup^#1{\mathop{\text{\Huge$\int_{\text{\normalsize$\scriptstyle\kern-0.35em%
\@int@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintsubnosup{\mathop{\text{\Huge$\int_{\text{\normalsize$\scriptstyle\@int@subscript$}}$}}\nolimits}
\def\@bigintnosub{\@ifnextchar^\@bigintnosubsup\@bigintnosubnosup}
\def\@bigintnosubsup^#1{\mathop{\text{\Huge$\int^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintnosubnosup{\mathop{\text{\Huge$\int$}}\nolimits}
\newcommand{\bigints}{\@ifnextchar_\@bigintssub\@bigintsnosub}
\def\@bigintssub_#1{\def\@int@subscript{#1}\@ifnextchar^\@bigintssubsup\@bigintssubnosup}
\def\@bigintssubsup^#1{\mathop{\text{\huge$\int_{\text{\normalsize$\scriptstyle\kern-0.35em%
\@int@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintssubnosup{\mathop{\text{\huge$\int_{\text{\normalsize$\scriptstyle\@int@subscript$}}$}}\nolimits}
\def\@bigintsnosub{\@ifnextchar^\@bigintsnosubsup\@bigintsnosubnosup}
\def\@bigintsnosubsup^#1{\mathop{\text{\huge$\int^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintsnosubnosup{\mathop{\text{\huge$\int$}}\nolimits}
\newcommand{\bigintss}{\@ifnextchar_\@bigintsssub\@bigintssnosub}
\def\@bigintsssub_#1{\def\@int@subscript{#1}\@ifnextchar^\@bigintsssubsup\@bigintsssubnosup}
\def\@bigintsssubsup^#1{\mathop{\text{\LARGE$\int_{\text{\normalsize$\scriptstyle\kern-0.25em%
\@int@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintsssubnosup{\mathop{\text{\LARGE$\int_{\text{\normalsize$\scriptstyle\@int@subscript$}}$}}\nolimits}
\def\@bigintssnosub{\@ifnextchar^\@bigintssnosubsup\@bigintssnosubnosup}
\def\@bigintssnosubsup^#1{\mathop{\text{\LARGE$\int^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintssnosubnosup{\mathop{\text{\LARGE$\int$}}\nolimits}
\newcommand{\bigintsss}{\@ifnextchar_\@bigintssssub\@bigintsssnosub}
\def\@bigintssssub_#1{\def\@int@subscript{#1}\@ifnextchar^\@bigintssssubsup\@bigintssssubnosup}
\def\@bigintssssubsup^#1{\mathop{\text{\Large$\int_{\text{\normalsize$\scriptstyle\kern-0.20em%
\@int@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintssssubnosup{\mathop{\text{\Large$\int_{\text{\normalsize$\scriptstyle\@int@subscript$}}$}}\nolimits}
\def\@bigintsssnosub{\@ifnextchar^\@bigintsssnosubsup\@bigintsssnosubnosup}
\def\@bigintsssnosubsup^#1{\mathop{\text{\Large$\int^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintsssnosubnosup{\mathop{\text{\Large$\int$}}\nolimits}
\newcommand{\bigintssss}{\@ifnextchar_\@bigintsssssub\@bigintssssnosub}
\def\@bigintsssssub_#1{\def\@int@subscript{#1}\@ifnextchar^\@bigintsssssubsup\@bigintsssssubnosup}
\def\@bigintsssssubsup^#1{\mathop{\text{\large$\int_{\text{\normalsize$\scriptstyle\kern-0.15em%
\@int@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintsssssubnosup{\mathop{\text{\large$\int_{\text{\normalsize$\scriptstyle\@int@subscript$}}$}}\nolimits}
\def\@bigintssssnosub{\@ifnextchar^\@bigintssssnosubsup\@bigintssssnosubnosup}
\def\@bigintssssnosubsup^#1{\mathop{\text{\large$\int^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigintssssnosubnosup{\mathop{\text{\large$\int$}}\nolimits}

\newcommand{\bigoint}{\@ifnextchar_\@bigointsub\@bigointnosub}
\def\@bigointsub_#1{\def\@oint@subscript{#1}\@ifnextchar^\@bigointsubsup\@bigointsubnosup}
\def\@bigointsubsup^#1{\mathop{\text{\Huge$\oint_{\text{\normalsize$\scriptstyle\kern-0.35em%
\@oint@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointsubnosup{\mathop{\text{\Huge$\oint_{\text{\normalsize$\scriptstyle\@oint@subscript$}}$}}\nolimits}
\def\@bigointnosub{\@ifnextchar^\@bigointnosubsup\@bigointnosubnosup}
\def\@bigointnosubsup^#1{\mathop{\text{\Huge$\oint^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointnosubnosup{\mathop{\text{\Huge$\oint$}}\nolimits}
\newcommand{\bigoints}{\@ifnextchar_\@bigointssub\@bigointsnosub}
\def\@bigointssub_#1{\def\@oint@subscript{#1}\@ifnextchar^\@bigointssubsup\@bigointssubnosup}
\def\@bigointssubsup^#1{\mathop{\text{\huge$\oint_{\text{\normalsize$\scriptstyle\kern-0.35em%
\@oint@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointssubnosup{\mathop{\text{\huge$\oint_{\text{\normalsize$\scriptstyle\@oint@subscript$}}$}}\nolimits}
\def\@bigointsnosub{\@ifnextchar^\@bigointsnosubsup\@bigointsnosubnosup}
\def\@bigointsnosubsup^#1{\mathop{\text{\huge$\oint^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointsnosubnosup{\mathop{\text{\huge$\oint$}}\nolimits}
\newcommand{\bigointss}{\@ifnextchar_\@bigointsssub\@bigointssnosub}
\def\@bigointsssub_#1{\def\@oint@subscript{#1}\@ifnextchar^\@bigointsssubsup\@bigointsssubnosup}
\def\@bigointsssubsup^#1{\mathop{\text{\LARGE$\oint_{\text{\normalsize$\scriptstyle\kern-0.25em%
\@oint@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointsssubnosup{\mathop{\text{\LARGE$\oint_{\text{\normalsize$\scriptstyle\@oint@subscript$}}$}}\nolimits}
\def\@bigointssnosub{\@ifnextchar^\@bigointssnosubsup\@bigointssnosubnosup}
\def\@bigointssnosubsup^#1{\mathop{\text{\LARGE$\oint^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointssnosubnosup{\mathop{\text{\LARGE$\oint$}}\nolimits}
\newcommand{\bigointsss}{\@ifnextchar_\@bigointssssub\@bigointsssnosub}
\def\@bigointssssub_#1{\def\@oint@subscript{#1}\@ifnextchar^\@bigointssssubsup\@bigointssssubnosup}
\def\@bigointssssubsup^#1{\mathop{\text{\Large$\oint_{\text{\normalsize$\scriptstyle\kern-0.20em%
\@oint@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointssssubnosup{\mathop{\text{\Large$\oint_{\text{\normalsize$\scriptstyle\@oint@subscript$}}$}}\nolimits}
\def\@bigointsssnosub{\@ifnextchar^\@bigointsssnosubsup\@bigointsssnosubnosup}
\def\@bigointsssnosubsup^#1{\mathop{\text{\Large$\oint^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointsssnosubnosup{\mathop{\text{\Large$\oint$}}\nolimits}
\newcommand{\bigointssss}{\@ifnextchar_\@bigointsssssub\@bigointssssnosub}
\def\@bigointsssssub_#1{\def\@oint@subscript{#1}\@ifnextchar^\@bigointsssssubsup\@bigointsssssubnosup}
\def\@bigointsssssubsup^#1{\mathop{\text{\large$\oint_{\text{\normalsize$\scriptstyle\kern-0.15em%
\@oint@subscript$}}^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointsssssubnosup{\mathop{\text{\large$\oint_{\text{\normalsize$\scriptstyle\@oint@subscript$}}$}}\nolimits}
\def\@bigointssssnosub{\@ifnextchar^\@bigointssssnosubsup\@bigointssssnosubnosup}
\def\@bigointssssnosubsup^#1{\mathop{\text{\large$\oint^{\text{\normalsize$\scriptstyle#1$}}$}}\nolimits}
\def\@bigointssssnosubnosup{\mathop{\text{\large$\oint$}}\nolimits}

\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 LaTeX 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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