Typesetting vectors with beautiful arrow with LaTeX 2_ε

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Abstract

The package esvect.sty allows typesetting vectors. Several arrows are available.

1 Installation

Run LaTeX 2_ε on esvect.ins to generate files:

1. Put esvect.sty on TEXINPUT.

2. Put uesvect.fd on TEXINPUT, for example with esvect.sty.

3. Put vect5.mf, vect6.mf, vect7.mf, vect8.mf, vect9.mf and vect10.mf on MFINPUT.

Run METAFONT on *.mf file to generate *.tfm files. For example:
`mf \mode=localfont; input vect5.mf`
Put vect5.tfm, ..., vect10.tfm on the right place.

2 Using esvect

Load the package with `\usepackage{esvect}`, and enjoy!
To obtain a vector, use the command `\vv{arg}`.
For example, `$\vv{E$}`, `$\vv{AB}$`, `$\vv{\imath}$` and `$\vv{u}$` give $\vec{E}$, $\vec{AB}$, $\vec{\imath}$ and $\vec{u}$.
A star version `\vv*{arg}{ind}` is available to typeset correctly a vector with a subscript: `$\vv*{e}{r}$` and `$\vv*{L}{\Delta}$` give $\vec{e}_r$ and $\vec{L}_\Delta$.
Height differents arrows are available. You have to select one using an option when you load the package: `\usepackage[a]{esvect}`, ..., `\usepackage[h]{esvect}`. The option d is selected by default.
Corresponding arrows are:

option	a	b	c	d	e	f	g	h
flèche	→	→	→	→	→	→	→	→

The size of the arrow is automatically calculated according to the math environment:
`$$\vv{E}_{\vv{u}_{\vv{u}}}$$` gives

$$\vec{E}_{\vec{u}_{\vec{u}}}$$

3   The code

The package identifies himself

```
1 ⟨*package⟩
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{esvect}
```

Definition of the symbol font:

```
4 \DeclareSymbolFont{esvector}      {U}{esvect}{m}{n}
```

Options processing:

```
 5 \DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'024} %default
 6 \DeclareOption{a}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'021}}
 7 \DeclareOption{b}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'022}}
 8 \DeclareOption{c}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'023}}
 9 \DeclareOption{d}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'024}}
10 \DeclareOption{e}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'025}}
11 \DeclareOption{f}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'026}}
12 \DeclareOption{g}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'027}}
13 \DeclareOption{h}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'030}}
14 \ProcessOptions\relax
```

Defition of the lines:

```
15 \DeclareMathSymbol{\montraita}{\mathrel}{esvector}{'040}
16 \DeclareMathSymbol{\montraitd}{\mathrel}{esvector}{'043}
17 \def\relbareda{\mathrel{\mathpalette\mathsm@sh\montraita}}
18 \def\relbaredd{\mathrel{\mathpalette\mathsm@sh\montraitd}}
```

Definition of the command:

```
19 \def\vv{\@ifstar{\vvstar}{\vecteur}}
20 \def\vvstar#1#2{\vecteur{#1}_{\mkern-1mu\relax#2}}
21 \newcommand{\vecteur}{%
22    \mathpalette{\overvect@\vectfill@}}
```

Definition of the characters used to draw the vector:

```
23 \def\vectfill@{\traitfill@\relbaredd\relbareda\fldr}
24 %\end{macrocode}
25 %Construction of the arrow:
26 %     \begin{macrocode}
27 \def\traitfill@#1#2#3#4{%
28   $\m@th\mkern2mu\relax#4#1\mkern-1.5mu%on met \relbaredd au d\'ebut
29   \cleaders\hbox{$#4\mkern0mu#2\mkern0mu$}\hfill%remplit avec relbareda
30   \mkern-1.5mu#3$%
31 }
```

Construction of the whole vector:

```
32 \def\overvect@#1#2#3{\vbox{\ialign{##\crcr%
33 \noalign{\kern-.7pt\nointerlineskip}#1#2\crcr%
34 \noalign{\kern-.3pt\nointerlineskip}$\m@th\hfil#2#3\hfil$\crcr}}}
```

```
35 ⟨/package⟩
```

```
36 ⟨*fdfile⟩
```

Font definition file:

```
37 \ProvidesFile{uesvect.fd}
38 \DeclareFontFamily{U}{esvect}{}
39 \DeclareFontShape{U}{esvect}{m}{n}{%
```

```
40        <5><6><7><8><9><10>gen*vect%
41        <10.95><12><14.4><17.28><20.74><24.88>vect10%
42        }{}
43 ⟨/fdfile⟩
```