Typesetting vectors with beautiful arrow with LaTeX 2ε

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Abstract

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

1 Installation

Run LaTeX 2ε 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 $\vec{E}$, $\overrightarrow{AB}$, $\vec{\imath}$ 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

⟨*package⟩

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{esvect}
```

Definition of the symbol font:

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

Options processing:

```
\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'024} %default
\DeclareOption{a}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'021}}
\DeclareOption{b}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'022}}
\DeclareOption{c}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'023}}
\DeclareOption{d}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'024}}
\DeclareOption{e}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'025}}
\DeclareOption{f}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'026}}
\DeclareOption{g}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'027}}
\DeclareOption{h}{\DeclareMathSymbol{\fldr}{\mathrel}{esvector}{'030}}
\ProcessOptions\relax
```

Defition of the lines:

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

Definition of the command:

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

Definition of the characters used to draw the vector:

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

Construction of the whole vector:

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

⟨/package⟩

⟨*fdfile⟩

Font definition file:

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

```
      <5><6><7><8><9><10>gen*vect%
      <10.95><12><14.4><17.28><20.74><24.88>vect10%
      }{}
```

⟨/fdfile⟩